PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

OCTOBER 2014

CITY OF HAMPTON

WASTEWATER OPERATIONS
550 N. BACK RIVER ROAD
HAMPTON, VA

WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540

Hampton
AMERICA'S FIRST

LEGEND:

(EXISTING)

- POWER POLE
- GUY WIRE
- GAS VALVE
- SANITARY MANHOLE
- SANITARY GATE VALVE
- SANITARY AIR RELEASE VALVE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- CURB DRAIN INLET
- YARD DRAIN INLET
- DRAINAGE MANHOLE
- TRAVERSE POINT
- EXISTING STORM PIPE

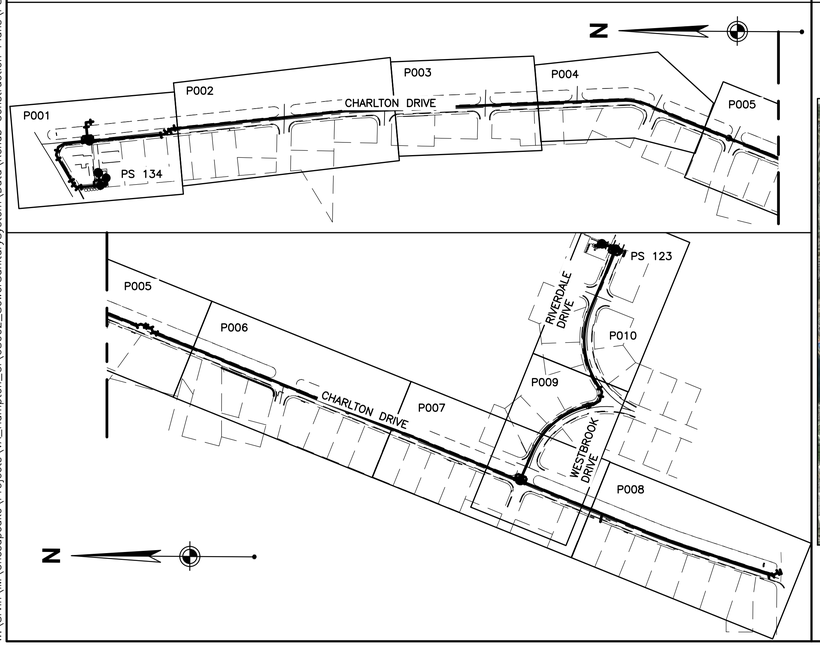
(PROPOSED)

- PROP. HDPE SAN FM
- AIR VENT
- HDPE REDUCER
- ABANDON PIPE
- CUT AND CAP
- MILL AND OVERLAY
- REPLACE CONCRETE
- DEMO CONCRETE
- SILT FENCE
- TREE PROTECTION
- INLET PROTECTION

PROJECT NARRATIVE:

THIS PROJECT INVOLVES THE REPLACEMENT OF APPROXIMATELY 6,500 LF OF EXISTING 10" AND 12" CAST IRON FORCE MAIN AND THE REHABILITATION OF APPROXIMATELY 600 LF OF 10" CAST IRON FORCE MAIN. THE PROJECT IS LOCATED ALONG CHARLTON DR., WESTBROOK DR., AND RIVERDALE DR. IN THE CITY OF HAMPTON. THE FORCE MAIN INSTALLATION WILL BE ACCOMPLISHED BY OPEN CUT METHODS.

SITE PLAN



VICINITY MAP

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C000 COVER SHEET

- MOST RECENT ISSUE OR REVISION DATE
- LATEST REVISION NUMBER
- FILLED CIRCLE INDICATES DRAWING INCLUDED WITH THIS ISSUE

No.	DATE	REVISION

PROJECT No.: 068002

COMMONWEALTH OF VIRGINIA
JAMES L. IRVING
Lic. No. 031109
10-13-14
PROFESSIONAL ENGINEER
SEAL

C000

GENERAL NOTES:

1. WHERE NOTED, "CITY" SHALL BE SHORTHAND NOTATION FOR CITY OF HAMPTON.
2. THE CONTRACTOR SHALL PROVIDE THE CITY FIVE WORKING DAYS NOTICE PRIOR TO COMMENCING WORK ON THE PROJECT. THE CONTRACTOR SHALL COORDINATE WITH BARRY DOBBINS (HAMPTON) AT: (757) 726–2944 AND JIM EWING (WOOLPERT) AT: (OFFICE) (757) 549–5360 OR (CELL) (757) 282–8423. FOR THE PURPOSES OF THESE CONTRACT DOCUMENTS, "ENGINEER" REFERS TO WOOLPERT.
3. NORMAL HOURS OF CONSTRUCTION ARE FROM 7 AM TO 5 PM.
4. THE LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM AVAILABLE UTILITY RECORDS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL CONTACT MISS UTILITY FOR MARKING ASSISTANCE PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES. THE ENGINEER ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THE DATA PROVIDED BY THE UTILITY OWNERS. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE EXACT LOCATION, ELEVATION, MATERIAL TYPE, ROUNDNESS (AT POINTS OF CONNECTION) AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ORDERING OF MATERIALS, EXCAVATION, AND INSTALLATION FOR THIS PROJECT. ALL COSTS ASSOCIATED WITH THE ADDITIONAL UNDERGROUND UTILITY LOCATING AND VERIFICATION SHALL BE INCIDENTAL AND INCLUDED IN THE CONTRACTOR BID FOR PROPOSED WORK.
5. THE CONTRACTOR SHALL HAND EXCAVATE WHEN CROSSING EXISTING UTILITIES TO AVOID DAMAGE. WHEN CONSTRUCTING WORK UNDER OR ADJACENT TO EXISTING UTILITIES, PROVIDE ADEQUATE SUPPORT TO PROTECT EXISTING UTILITIES FROM DAMAGE.
6. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE OVERHEAD HIGH VOLTAGE ACT AND SHALL PROVIDE TEMPORARY SUPPORT TO UTILITY POLES WHERE NECESSARY.
7. IF EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR IMMEDIATE REPAIR TO PRE–CONSTRUCTION CONDITION AT CONTRACTOR EXPENSE.
8. THE CONTRACTOR SHALL ENSURE ALL UTILITIES REMAIN IN SERVICE DURING CONSTRUCTION, EXCEPT FOR CITY APPROVED OUTAGES. VALVES MAY ONLY BE OPENED AND CLOSED BY OR UNDER THE DIRECT SUPERVISION OF THE OWNER'S PERSONNEL.
9. THE CONTRACTOR SHALL RESTORE ALL EXISTING SITE CONDITIONS (CURBS, SIDEWALKS, DRIVEWAYS, MAILBOXES, ETC.) DAMAGED DURING CONSTRUCTION, TO THEIR PRE–CONSTRUCTION CONDITIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED BY THE STATE OF VIRGINIA, CITY OF HAMPTON, OR OTHER GOVERNING AGENCIES, AS NECESSARY, TO COMPLETE THIS PROJECT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH OBTAINING THESE PERMITS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT INGRESS/EGRESS IS MAINTAINED TO ALL ENTRANCES.
12. THE CONTRACTOR SHALL COORDINATE WITH, AND ARRANGE FOR INSPECTION BY THE ENGINEER.
13. THE CONTRACTOR SHALL COMPLY WITH ALL EROSION AND SEDIMENT CONTROL REGULATORY REQUIREMENTS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
14. MATERIAL EXCAVATED FROM TRENCHES SHALL BE PLACED ON THE UP–SLOPE SIDE OF THE TRENCH WHEN TRENCHING IN NON–PAVEMENT AREAS, PLACE SILT FENCE ON THE DOWN–SLOPE SIDE OF THE TRENCH.
15. ALL SLOPES AND DISTURBED AREAS SHALL BE FERTILIZED, SEEDED AND MULCHED. THE MAXIMUM ALLOWABLE SLOPE IS 2:1 (HORIZONTAL:VERTICAL). WHERE REASONABLY OBTAINABLE, LESSER SLOPES OF 3:1 OR BETTER ARE TO BE ACHIEVED.
16. THE CONTRACTOR SHALL VERIFY THE ACTUAL FIELD CONDITIONS AND DEPTH AT EACH POINT OF CONNECTION TO EXISTING UTILITIES TO ALLOW ADJUSTMENTS IN THE WORK WITHOUT IMPACTING THE WORK PROGRESSION.
17. THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING TREES AND SHRUBS AND OTHER LANDSCAPE FEATURES, UNLESS OTHERWISE NOTED FOR REMOVAL ON THE DRAWING.
18. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT AND PERFORM ALL WORK NECESSARY TO COMPLETE ALL WORK AS SHOWN ON THESE PLANS. WORK SHALL BE COMPLETED IN ACCORDANCE WITH APPLICABLE STANDARDS AND CONSTRUCTION SPECIFICATIONS OF HRPDC, VDOT, VDH, THE CITY OF HAMPTON, AND THESE CONTRACT DOCUMENTS.
19. ANY UNUSUAL SUBSURFACE CONDITIONS ENCOUNTERED DURING THE COURSE OF THE WORK SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY AND THE ENGINEER.
20. THE CONTRACTOR SHALL CLEAN UP AND RESTORE DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF WORK WITHIN THE AFFECTED AREA.
21. THE CONTRACTOR SHALL PROVIDE UNIFORM (STRAIGHT) GRADE BETWEEN SPOT ELEVATIONS, VALVE BOXES, ETC.
22. ALL EXCAVATION FOR UNDERGROUND PIPE INSTALLATION MUST COMPLY WITH OSHA STANDARDS FOR THE CONSTRUCTION INDUSTRY (29 CFR PART 1926). LIVE GAS LINES EXIST IN MULTIPLE AREAS OF THE PROJECT CORRIDOR, AND IN THE VICINITY OF PROPOSED UTILITY WORK. CONTRACTOR SHALL COMPLY WITH ALL PERTINENT REGULATIONS AND GAS UTILITY PROVIDER REQUIREMENTS FOR WORK IN THE VICINITY OF THESE GAS LINES.
23. CONNECTIONS TO EXISTING UTILITIES SHALL BE MADE AS INDICATED. THE CONTRACTOR SHALL COORDINATE THE SHUTDOWN OF EXISTING AND/OR ACTIVATION OF PROPOSED UTILITIES WITH THE CITY FOURTEEN (14) DAYS PRIOR TO ANTICIPATED DATE OF CHANGEOVER AND OR TIE IN. A REPRESENTATIVE FROM THE CITY SHALL BE PRESENT DURING TIE INS TO EXISTING UTILITY LINES.
24. SUBMIT A PLAN OF OPERATION TO THE CITY FOR APPROVAL NO LESS THAN TWENTY ONE (21) DAYS PRIOR TO ANY CONNECTION TO EXISTING FACILITIES REQUIRING OUTAGES/DISRUPTION OF SERVICE. THIS PLAN OF OPERATION SHALL CLEARLY INDICATE WHICH EXISTING LINES WILL REQUIRE OUTAGES, PROPOSED METHODS AND PLAN OF CONNECTION, TIMEFRAME REQUIRED TO PERFORM WORK, INDICATION THAT NECESSARY LABOR, EQUIPMENT, AND MATERIALS WILL BE AVAILABLE TO COMPLETE THE WORK WITHIN THE SPECIFIED TIMEFRAME, AND ANY OTHER PERTINENT INFORMATION SPECIFIC TO THE PROPOSED WORK ACTIVITY. THE PLAN OF OPERATION SHALL ALSO INCLUDE A CONTINGENCY PLAN TO ADDRESS ANY POTENTIAL COMPLICATIONS OR CIRCUMSTANCES THAT COULD AFFECT COMPLETION OF THE WORK WITHIN THE SPECIFIED TIMEFRAME. PUBLIC NOTIFICATION AND PREPARATION FOR OUTAGES SHALL BE PROVIDED BY THE CITY.
25. NO BELLS OF PROPOSED UTILITIES SHALL BE LOCATED UNDERNEATH DRAINAGE/UTILITY LINES AT CROSSINGS. FULL LENGTHS OF PROPOSED LINE SECTIONS SHALL BE CENTERED AT CROSSINGS.
26. THE CONTRACTOR SHALL UTILIZE STRAPS INSTEAD OF CHAINS, CABLES, OR UNPADDED FORKS TO HANDLE PIPE.
27. THE CONTRACTOR SHALL PROTECT ALL DISTURBED AREAS FROM WATER DAMAGE. ALL UNSUITABLE MATERIALS THAT ARE THE RESULT OF THE CONTRACTOR'S ACTION SHALL BE REMOVED AND REPLACED WITH LIKE MATERIALS AT THE CONTRACTOR'S EXPENSE.
28. ALL UTILITY PIPE, LININGS, VALVES AND WORK SHALL CONFORM TO HAMPTON ROADS PLANNING DISTRICT COMMISSION (HRPDC) REGIONAL CONSTRUCTION STANDARDS.
29. THE CONTRACTOR IS RESPONSIBLE FOR KNOWING AND UNDERSTANDING ALL PERTINENT VIRGINIA DEPARTMENT OF HEALTH (VDH) WATERWORKS REGULATIONS.
30. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS, AND PERSONNEL AS REQUIRED TO DEWATER TRENCHES AND EXCAVATIONS DURING INSTALLATION OF NEW PIPE AND STRUCTURES.
31. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT TREE PRESERVATION AND PROTECTION INDICATED ADEQUATELY PROTECTS DELINEATED TREES AND ROOT STRUCTURE. IF TREE ROOT STRUCTURE AFFECTED BY EXCAVATIONS, CONTRACTOR SHALL RELOCATE OR REPLACE THE TREE AT THE DISCRETION OF THE CITY. IF TREE REPLACEMENT IS REQUIRED, REPLACE WITH TREE OF SAME DIAMETER. IF RELOCATION IS REQUIRED, CONTRACTOR SHALL HAVE TREE RELOCATED BY SUB–CONTRACTOR SPECIALIZING IN THIS TYPE OF WORK.
32. TREE SHALL BE RELOCATED TO LOCATION AS DIRECTED BY THE CITY. TREE HEALTH SHALL BE GUARANTEED FOR A MINIMUM OF FIVE YEARS. TREES INDICATED TO BE REPLACED BY THE CITY SHALL ALSO CONFORM TO THESE REQUIREMENTS.
33. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO OWNER/RESIDENT OF PROPERTY ADJACENT TO A DEVELOPMENT OR OFFSITE IMPACTED AREA 30 DAYS PRIOR TO COMMENCEMENT OF WORK UNLESS OTHERWISE DIRECTED BY THE CITY. FAILURE TO PROVIDE MINIMUM NOTICE SHALL RESULT IN SUSPENSION OF WORK.
34. ANY REVISION TO THE APPROVED TRAFFIC CONTROL PLANS SHALL BE COORDINATED THROUGH THE ENGINEER AND THE CITY.
35. CITY OF HAMPTON DEPARTMENT OF PUBLIC WORKS OPERATIONS–STREET OPERATIONS 550 NORTH BACK RIVER ROAD, HAMPTON, VA 23669 CONTACT INFORMATION IS AS FOLLOWS:
    DEPARTMENT OF PUBLIC WORKS: (757) 726–2914
    FAX: (757) 726–2822
    OUTSIDE NORMAL WORKING HOURS: (757) 727–8311
36. A PRECONSTRUCTION MEETING WITH THE CITY IS REQUIRED. CONTACT THE CITY (ZANDY AMOR) AT (757) 726–2914 TO SCHEDULE THIS MEETING.
37. IF WATER SERVICE LINES ARE DAMAGED, THEY MUST BE REPLACED FROM THE METER BOX TO THE MAIN. SPLICES ARE NOT ACCEPTABLE.
38. JOINT DEFLECTION SHALL NOT EXCEED 80% OF THE MANUFACTURER'S RECOMMENDED MAXIMUM OR AWWA MAXIMUM, WHICHEVER IS LESS.

DRAINAGE NOTES:

1. TEMPORARY DRAINAGE DURING CONSTRUCTION TO BE PROVIDED BY THE CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAY, OR PROTECT THE INTEGRITY OF THE SUBGRADE. THE CONTRACTOR IS RESPONSIBLE FOR DETERIORATION OF SUBGRADE CAUSED BY NEGLIGENT CONSTRUCTION METHODS AND INADEQUATE DRAINAGE. FAILURE TO PROVIDE TEMPORARY DRAINAGE WILL RESULT IN THE CONTRACTOR'S RESPONSIBILITY TO CORRECT DAMAGED SUBGRADE AT THE CONTRACTOR'S EXPENSE.
2. PROVIDE TEMPORARY DRAINAGE OF PAVEMENT AND ADJACENT PROPERTY TO PREVENT STANDING WATER.
3. WHENEVER SEDIMENT–LADEN WATER IS REMOVED FROM A CONSTRUCTION SITE BY MEANS OF PUMPING, A TEMPORARY SETTLING AND FILTERING DEVICE SHALL BE USED TO FILTER THE SEDIMENT–LADEN WATER PRIOR TO THE WATER BEING DISCHARGED OFF–STE

BYPASS PUMPING:

1. THE CONTRACTOR SHALL HAVE AT LEAST TWO BYPASS PUMPS ON SITE. PUMPS SHALL BE SIZED TO HANDLE PEAK FLOW WITH 100% REDUNDANCY. BACKUP PUMPS SHALL BE AVAILABLE FOR REPLACEMENT SHOULD THE PRIMARY BYPASS PUMPS FAIL.
2. THE CONTRACTOR IS TO MONITOR AND CONTROL THE BYPASS PUMPING OPERATION INCLUDING, BUT NOT LIMITED TO, THE WATER LEVELS IN THE BYPASS MANHOLES.
3. THRUST RESTRAINTS AND OTHER REQUIREMENTS RELATED TO THE BYPASS LINES ARE TO BE DETERMINED AND ADJUSTED BY THE CONTRACTOR WITH REGARD TO EACH BYPASS ROUTE.

PUMP STATION BYPASS

A. THE CONTRACTOR SHALL SUBMIT A FLOW CONTROL AND SEWAGE BYPASSING ARRANGEMENT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS (14 CALENDAR DAYS) PRIOR TO COMMENCING WORK. FLOW CONTROL INCLUDES, BUT IS NOT LIMITED TO, PLUGGING AND BYPASS PUMPING. THE PLAN MUST BE SPECIFIC AND COMPLETE, INCLUDE ALL LAYOUTS OF THE BYPASS PIPING, AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING DETAILS:
   1. EQUIPMENT LIST/SITE PLAN WITH EQUIPMENT LAYOUT.
   2. MONITORING PLAN.
   3. DESCRIPTION OF EQUIPMENT OPERATIONAL CONTROLS.
   4. SPILL CONTINGENCY PLANS AND PROTECTION AGAINST PIPE BREAKS.
   5. METHOD OF CONNECTING TO DISCHARGE FORCE MAIN.
   6. SIZE, LENGTH, MATERIAL, AND METHOD OF INSTALLATION FOR SUCTION AND DISCHARGE PIPING.
   7. METHOD OF NOISE CONTROL FOR EACH PUMP AND/OR GENERATOR.
   8. CONSTRUCTION SEQUENCE.
   9. BYPASS TIME DURATION FOR THE FORCE MAIN INSTALLATION AND PUMP STATION PIPING MODIFICATIONS.

B. BYPASSED FLOW MUST BE DISCHARGED TO THE PROP. SANITARY SEWER FORCE MAN AND SHALL BE CONTINUOUS AND UNINTERRUPTED.

C. THE CONTRACTOR SHALL SUPPLY THE NECESSARY PUMPS, CONDUITS, ENGINE CONTROLS, LEVEL CONTROLS, AND OTHER EQUIPMENT TO DIVERT THE FLOW OF SEWAGE IN ACCORDANCE WITH THE APPROVED PLAN. THE CONTRACTOR SHALL HAVE BACKUP EQUIPMENT ON SITE AND CONNECTED TO THE PRIMARY PUMPING SYSTEM. THE BACKUP EQUIPMENT SHALL BE THE SAME AS THE PRIMARY PUMPING SYSTEM. THE PUMPING/BYPASS SYSTEM SHALL BE ADEQUATE IN SIZE TO HANDLE THE EXISTING PEAK FLOWS DESIGN PUMPING RATE = 1,650 GPM, AVERAGE DAILY INFLOW = 660 GPM. THE CONTRACTOR SHALL SELECT PUMPING/BYPASSING EQUIPMENT THAT WILL NOT HAVE EXCESSIVE NOISE LEVELS AND SHALL BE RESTRICTED TO A MAXIMUM OF SIXTY DECIBELS (60 DB) AT A DISTANCE OF FIFTY FEET (50'). THE CONTRACTOR SHALL ALSO BE REQUIRED TO HAVE ON SITE A 500 GALLON FUEL CUBE TO SUPPORT THE BYPASS PUMPS.

D. THE CONTRACTOR SHALL ALSO FURNISH THE LABOR AND SUPERVISION TO SET UP, OPERATE AND MAINTAIN, AND CONTINUOUSLY MONITOR THE PUMPING/BYPASS SYSTEM FROM THE TIME THE PUMP STATION IS TAKEN OUT OF SERVICE UNTIL IT IS RETURNED TO SERVICE. BYPASS CONTRACTOR SHALL BE CAPABLE OF RESPONDING TO MAINTENANCE NEEDS IN TWO HOURS OR LESS.

E. FLOW CONTROL PRECAUTIONS
   1. WHEN FLOW IS BYPASSED BY THE CONTRACTOR, HE SHALL TAKE PRECAUTIONS TO PROTECT THE PUBLIC HEALTH AND TO PROTECT THE SEWER LINES FROM DAMAGE THAT MIGHT RESULT FROM SEWER SURCHARGING. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO INSURE THAT SEWER FLOW CONTROL OPERATIONS DO NOT CAUSE FLOODING OR DAMAGE TO PUBLIC OR PRIVATE PROPERTY BEING SERVED BY THE SEWERS INVOLVED AND HE SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM HIS FLOW CONTROL OPERATIONS.
   2. DURING THE BYPASS PUMPING PERIOD NO LIQUID OR SOLID MATTER SHALL BE ALLOWED TO BE DISCHARGED ON THE GROUND, SWALE, ROAD, STORMWATER DRAINAGE SYSTEM, OR OPEN ENVIRONMENT. THE CONTRACTOR SHALL PROTECT ALL PUMPS, CONDUIT AND OTHER EQUIPMENT USED FOR BYPASS PUMPING FROM TRAFFIC DAMAGE.
   3. SHOULD ANY LIQUID OR SOLID MATTER FROM THE SEWER COLLECTION SYSTEM BE SPILLED, DISCHARGED, LEAKED, OR OTHERWISE DEPOSITED TO THE OPEN ENVIRONMENT AS A RESULT OF THE CONTRACTOR'S FLOW CONTROL OPERATIONS, HE SHALL IMMEDIATELY CLEANUP AND DISINFECT THE AFFECTED AREA AND ASSUME ALL COSTS ASSOCIATED WITH SAME. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER, HAMPTON, AND THE APPROPRIATE REGULATORY AGENCIES AND PERFORM REQUIRED CLEANUP OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.

SUGGESTED SEQUENCE OF CONSTRUCTION:

1. OBTAIN REQUIRED PERMITS FROM THE CITY OF HAMPTON.
2. ATTEND PRECONSTRUCTION MEETING WITH THE ENGINEER AND THE CITY OF HAMPTON.
3. NOTIFY AFFECTED PROPERTY OWNERS.
4. ESTABLISH EROSION AND SEDIMENT CONTROLS.
5. ESTABLISH MAINTENANCE OF TRAFFIC CONTROLS.

PUMP STATION 134 FM

6. INSTALL PROPOSED FORCE MAIN FROM APPROXIMATE STATION 0+05 AT PS 134 TO 53+90. DO NOT MAKE CONNECTIONS TO PUMP STATION OR EXISTING 10" FORCE MAIN. INSTALL AND CLOSE PROPOSED GATE VALVE ON BRANCH SIDE OF TEE AT STATION 44+27.
7. INSTALL PROPOSED EPC PIPING AND VALVE AT EPC TEE. CLOSE VALVE.
8. PERFORM PRESSURE TEST ON ENTIRE SECTION OF PIPELINE.
9. ESTABLISH BYPASS PUMPING OPERATIONS AT PS 134.
10. COORDINATE SHUT DOWN OF PS 134 WITH CITY OF HAMPTON PERSONNEL.
11. COMPLETE PROPOSED PIPING IMPROVEMENTS WITHIN PS 134 DRYWELL. CONNECT TO FORCE MAIN PIPING OUTSIDE OF STATION.
12. COORDINATE CLOSING OF VALVE AT HRSD CONNECTION ALONG MERCURY BLVD. CONNECT PIPING TO 10" FORCE MAIN, APPROXIMATE STATION 54+12.
13. REMOVE BYPASS PUMP OPERATIONS AT PS 134 AND OPEN VALVE AT HRSD CONNECTION. VISUALLY INSPECT CONNECTIONS FOR LEAKS.

PUMP STATION 123 FM

14. INSTALL PROPOSED FORCE MAIN FROM APPROXIMATE STATION 10+65 TO APPROXIMATE STATION 0+09. DO NOT MAKE CONNECTIONS TO PROPOSED VALVE OR PUMP STATION.
15. INSTALL AND CLOSE PROPOSED GATE VALVE ON DOWNSTREAM SIDE OF TEE AT STATION 0+73. PERFORM PRESSURE TEST ON THIS SECTION OF PIPELINE. AFTER SUCCESSFUL PRESSURE TEST, CONNECT PIPE TO GATE VALVE AT BRANCH CONNECTION TO PS 134 FM.
16. COORDINATE SHUT DOWN OF PS 123 WITH CITY OF HAMPTON PERSONNEL. COORDINATE CLOSING OF VALVE AT HRSD CONNECTION ALONG MERCURY BLVD.
17. CONNECT PIPING TO 10" FORCE MAIN AT PS 123.
18. OPEN GATE VALVE AT BRANCH CONNECTION TO PS 134 FORCE MAIN AND TURN ON PUMPS AT PS 123. VISUALLY INSPECT CONNECTIONS FOR LEAKS.

PUMP STATION 123 FM REHABILITATION

19. CCTV AND CLEAN EXISTING PS 123 FORCE MAIN.
20. COMPLETE REHABILITATION OF FORCE MAIN BY CIPP METHODS.
21. PERFORM PRESSURE TEST ON THIS SECTION OF PIPELINE. AFTER SUCCESSFUL PRESSURE TEST, CONNECT PIPE TO VALVE ON DOWNSTREAM SIDE OF TEE AT STATION 0+73. RECONNECT PIPE TO VALVE AT HRSD CONNECTION.

PROJECT CLOSEOUT

22. COMPLETE PAVEMENT AND RIGHT OF WAY RESTORATION AS INDICATED ON THE DRAWINGS.
23. REMOVE TRAFFIC CONTROL MEASURES.
24. REMOVE EROSION AND SEDIMENT CONTROL MEASURES AFTER DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.

PUMP STATION SAFETY NOTES:

1. KEY CREW MEMBERS FROM CONTRACTR AND SUB–CONTRACTOR (IF APPLICABLE) WILL BE REQUIRED TO HAVE A SAFETY BRIEFING ON SITE PRIOR TO ENTERING THE PUMP STATION; THIS WILL BE DONE BY HAMPTON SAFETY PERSONNEL WHICH WILL REQUIRE COORDINATION ROUGHLY ONE WEEK PRIOR TO THE MEETING.
2. PUMP STATION KEYS (IF APPLICABLE) WILL BE ISSUED TO THE CONTRACTOR AS NEEDED. CONTRCTOR WILL BE REQUIRED TO CONTACT KEVIN JACKSON AT CITY OF HAMPTON (757–727–8408) DAILY AS THEY ARE WORKING IN THE PUMP STATION AS WELL AS SIGNING IN ON THE SIGN–IN SHEET LOCATED AT THE PUMP STATION.
3. THE CONTRACTOR WILL BE REQUIRED TO HAVE THEIR OWN CONFINED SPACE PERSONNEL AND PERMIT.

UTILITY OWNERS

TRAFFIC CONTROL

CITY OF HAMPTON
PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING & OPERATIONS
419 N ARMISTEAD AVE.
HAMPTON, VA 23669
TEL: 757-727-8311

SEWER

CITY OF HAMPTON
PUBLIC WORKS DEPARTMENT
WASTEWATER OPERATIONS
550 N BACK RIVER ROAD
HAMPTON, VA 23669
CONTACT: BARRY DOBBINS
TEL: 757-726-2944

HRSD

1436 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
CONTACT: EDWARD HEADY
TEL: 757-460-2261

WATER

NEWPORT NEWS WATERWORKS
700 TOWN CENTER DRVIE
NEWPORT NEWS, VA 23606
TEL: 757-926-1000

CABLE

COX COMMUNICATIONS
5200 CLEVELAND STREET
VIRGINIA BEACH, VA 23462
CONTACT: CHRIS TOBIN
TEL: 757-222-2027

VA NATURAL GAS

PO BOX 4569
ATLANTA, GA 30302
CONTACT: KEVIN STARKE
TEL: 757-616-7529

ELECTRIC

DOMINION VA POWER
701 EASY CARY STREET
RICHMOND, VA 23219
CONTACT:
TEL: 804-771-4703

TELEPHONE

VERIZON
2920 ELMHURST AVENUE
PORTSMOUTH, VA 23701
CONTACT: STEWART STROTHERS, III
TEL: 757-855-9629

BEFORE YOU DIG, TO MISS THE UTILITIES CALL
811
MISS UTILITY OF VIRGINIA

COMMONWEALTH OF VIRGINIA
JAMES E. EWING
Lic. No. 031109
10–13–14
PROFESSIONAL ENGINEER
SEAL

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE
676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
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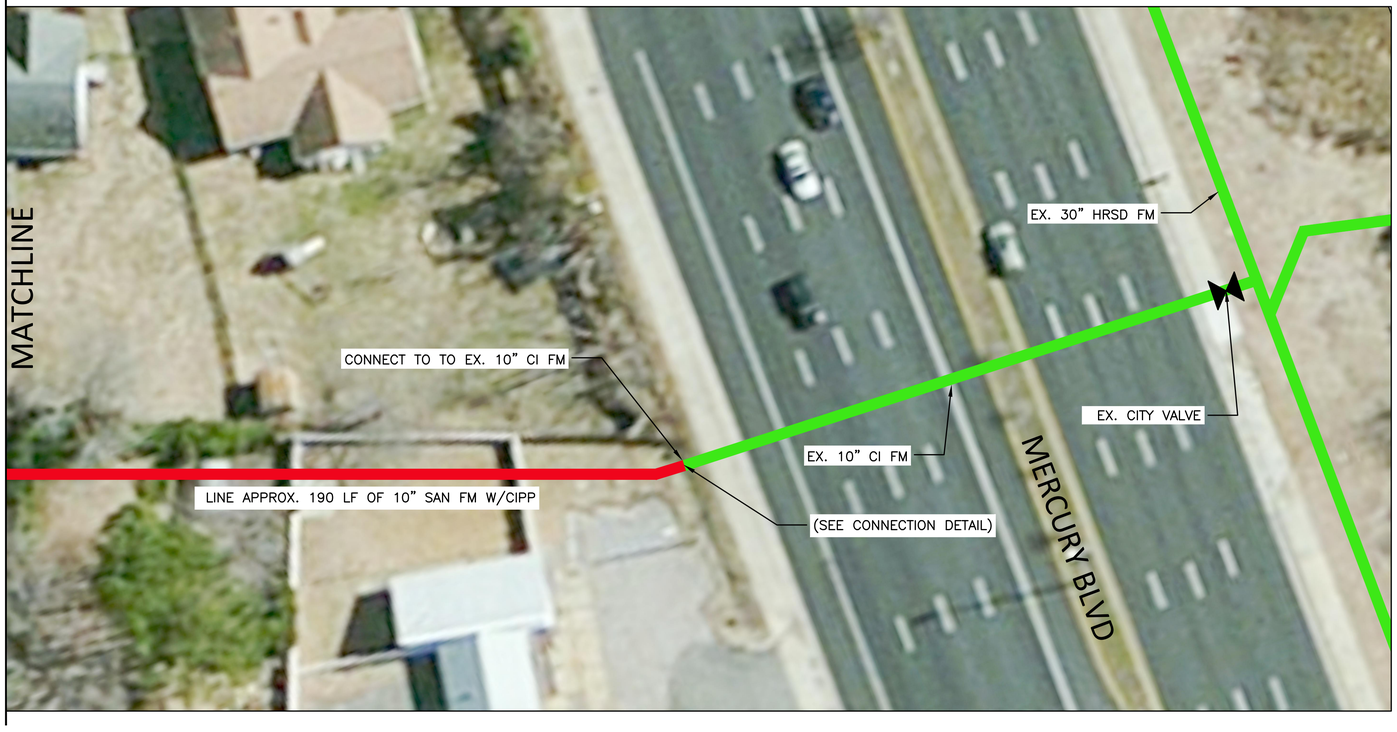
PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

GENERAL NOTES

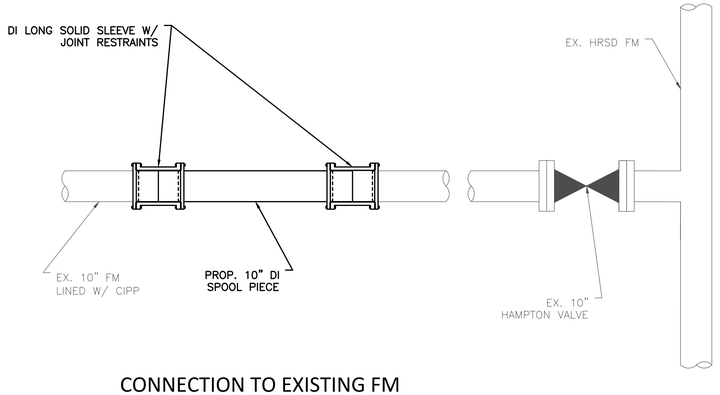
SHEET NO.
C001



GRAPHIC SCALE IN FEET
0 20 40 60

GENERAL NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE CITY IN THE EVENT THAT ACCESS TO THE CITY'S UTILITY EASEMENT IS NEEDED. THE CITY WILL COORDINATE WITH RESIDENTS FOR ACCESS.
2. THE CONTRACTOR SHALL CCTV AND CLEAN THE EXISTING FORCE MAIN IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
3. HEAVY CLEANING SHALL BE PAID FOR SEPARATELY, AS DIRECTED BY THE CITY.
4. THE LOCATION, SIZE AND MATERIAL OF EXISTING UTILITIES SHOWN ON THESE PLANS IS BASED ON AVAILABLE UTILITY RECORDS AND CITY OF HAMPTON GIS INFORMATION. THE CONTRACTOR SHALL VERIFY UTILITY SIZE, MATERIAL AND ROUNDNESS (AT POINTS OF CONNECTION) PRIOR TO ORDERING MATERIALS. ALL COSTS ASSOCIATED WITH UTILITY VERIFICATION SHALL BE INCIDENTAL AND INCLUDED IN THE PRICE OF THE BID ITEM.



CONNECTION TO EXISTING FM
(NOT TO SCALE)

COMMONWEALTH OF VIRGINIA
JAMES [illegible]
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
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PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

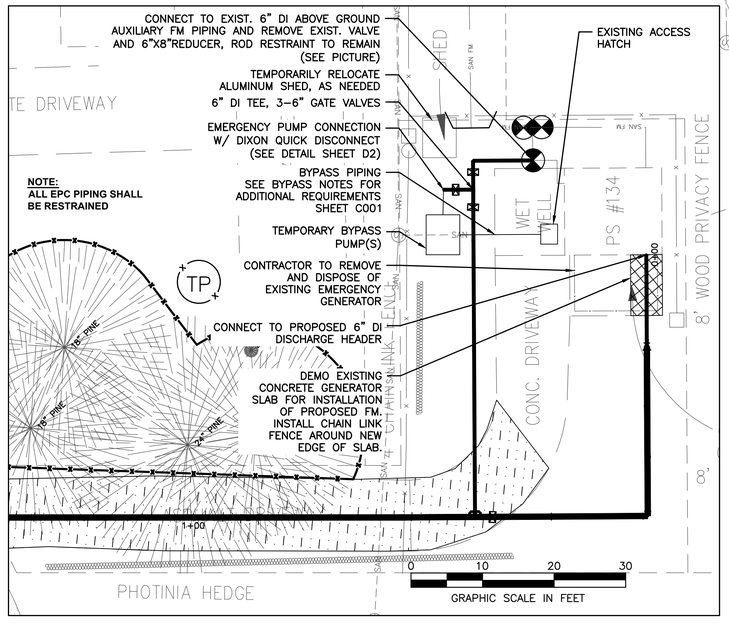
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

REHABILIITATION PLAN

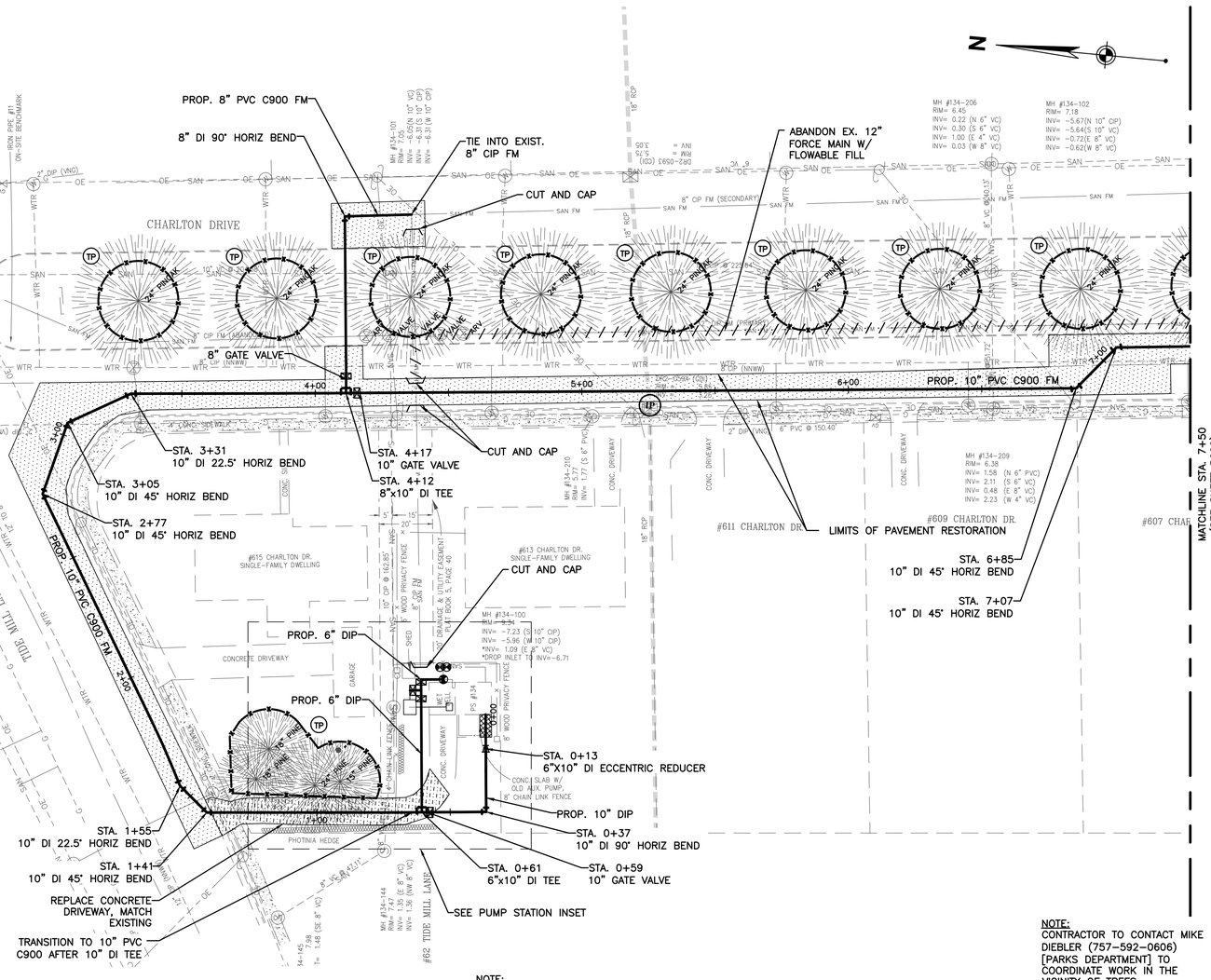
SHEET NO.
C002

AUXILIARY PIPING

NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM

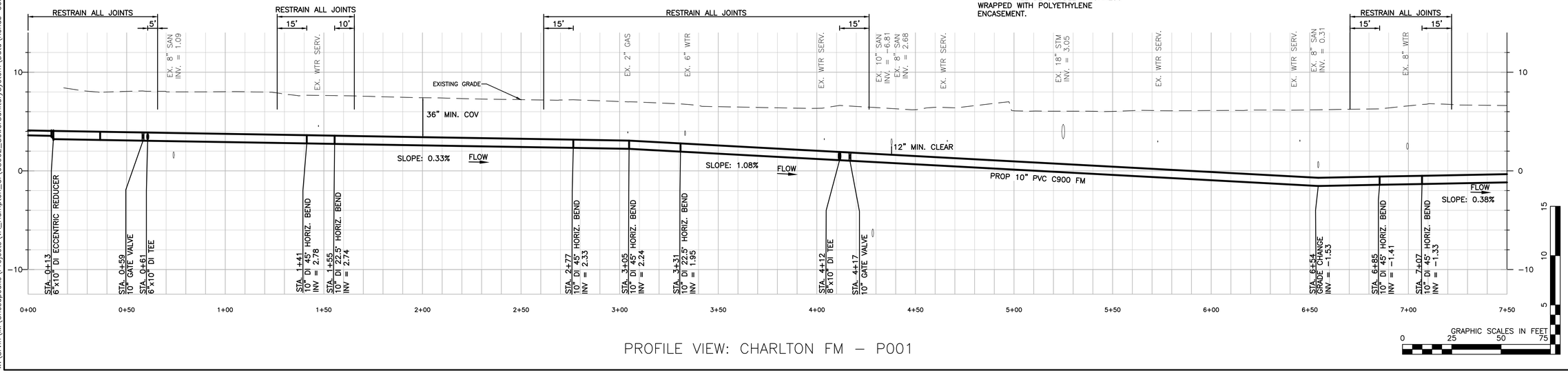


PUMP STATION INSET



NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: CHARLTON FM – P001

COMMONWEALTH OF VIRGINIA
JAMES M. WOOLPERT
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14
SEAL

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540
WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

PLAN & PROFILE

SHEET NO.
P001

Layout Tab Name: P001, Images: DSCN3021.JPG; , Xrefs: 68002_TBLK.dwg; 68002_X.dwg; 68002_U.dwg
Last Saved By:brien, 3/31/2015 8:49:47 AM
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NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM

ABANDON EX. 12" FORCE MAIN W/ FLOWABLE FILL

PROP. 10" PVC C900 FM

LIMITS OF PAVEMENT RESTORATION

PROVIDE NEOPRENE PAD & TYPE IV BEDDING BETWEEN UTILITY CROSSING

MATCHLINE STA. 7+50 (SEE SHEET P001)

MATCHLINE STA. 15+00 (SEE SHEET P003)

CHARLTON DRIVE

TOWLER DRIVE

BRAMSTON DRIVE

#605 CHARLTON DR.

#603 CHARLTON DR.

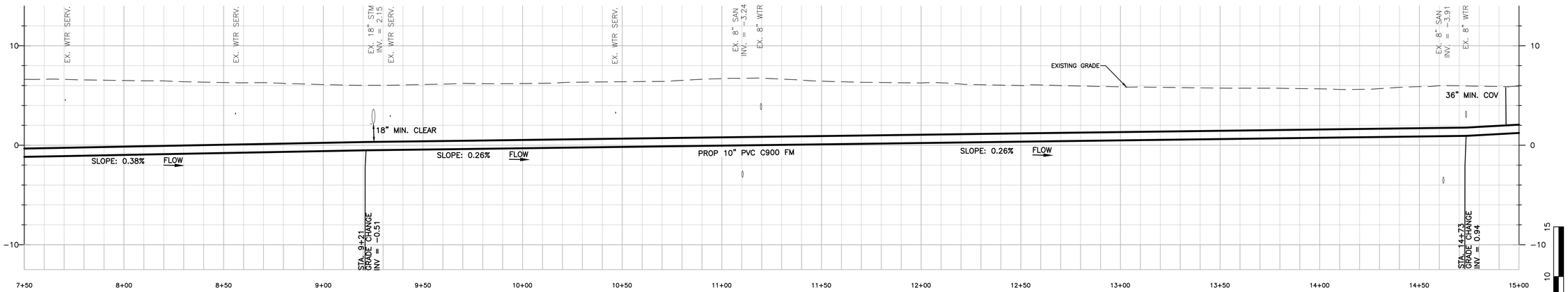
#100 TOWLER DRIVE

#505 CHARLTON DR.

#100 BRAMSTON DR.

NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.



PROFILE VIEW: CHARLTON FM – P002

GRAPHIC SCALES IN FEET
0 25 50 75

COMMONWEALTH OF VIRGINIA
JAMES W. [illegible]
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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WOOLPERT
DESIGN | RESIDENTIAL | INFRASTRUCTURE

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

PLAN & PROFILE

SHEET NO.
P002

Layout Tab Name: P002, Images: DSCN3021.JPG: , Xrefs: 68002_TBLK.dwg; 68002_X.dwg; 68002_U.dwg
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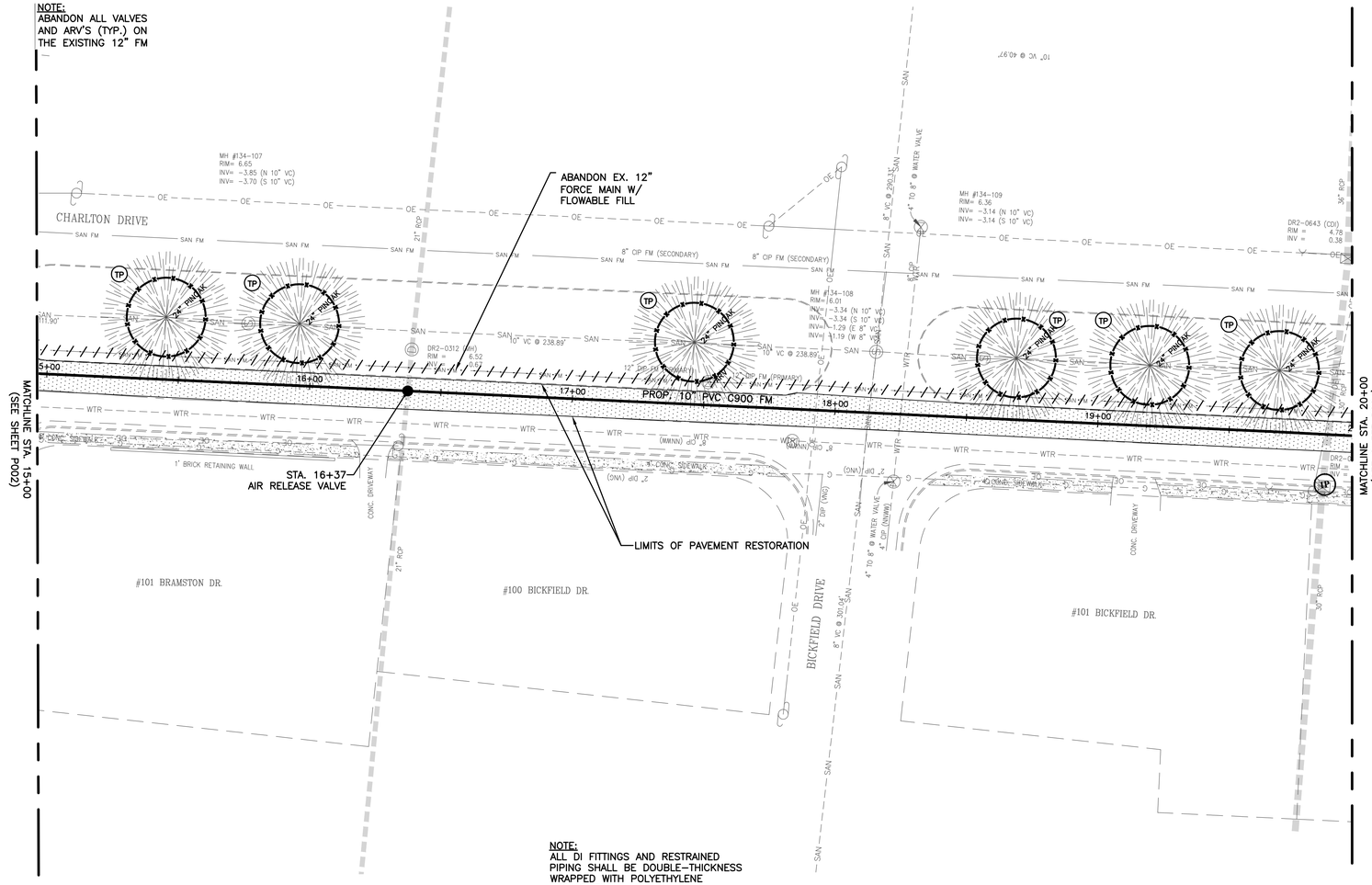
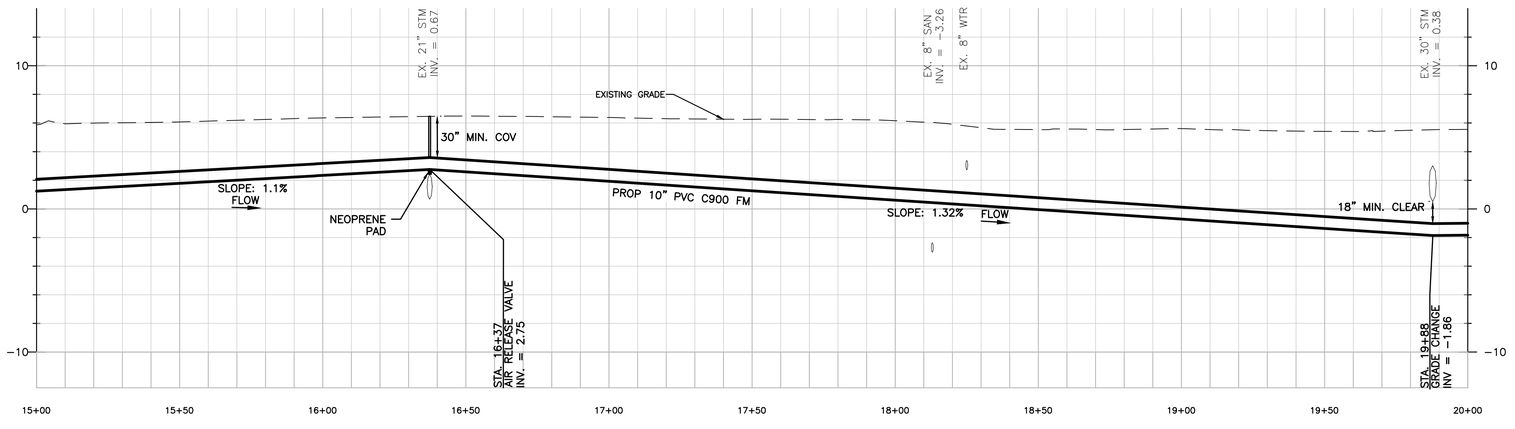
NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM



NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: CHARLTON FM – P003

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14
SEAL

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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WOOLPERT
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PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

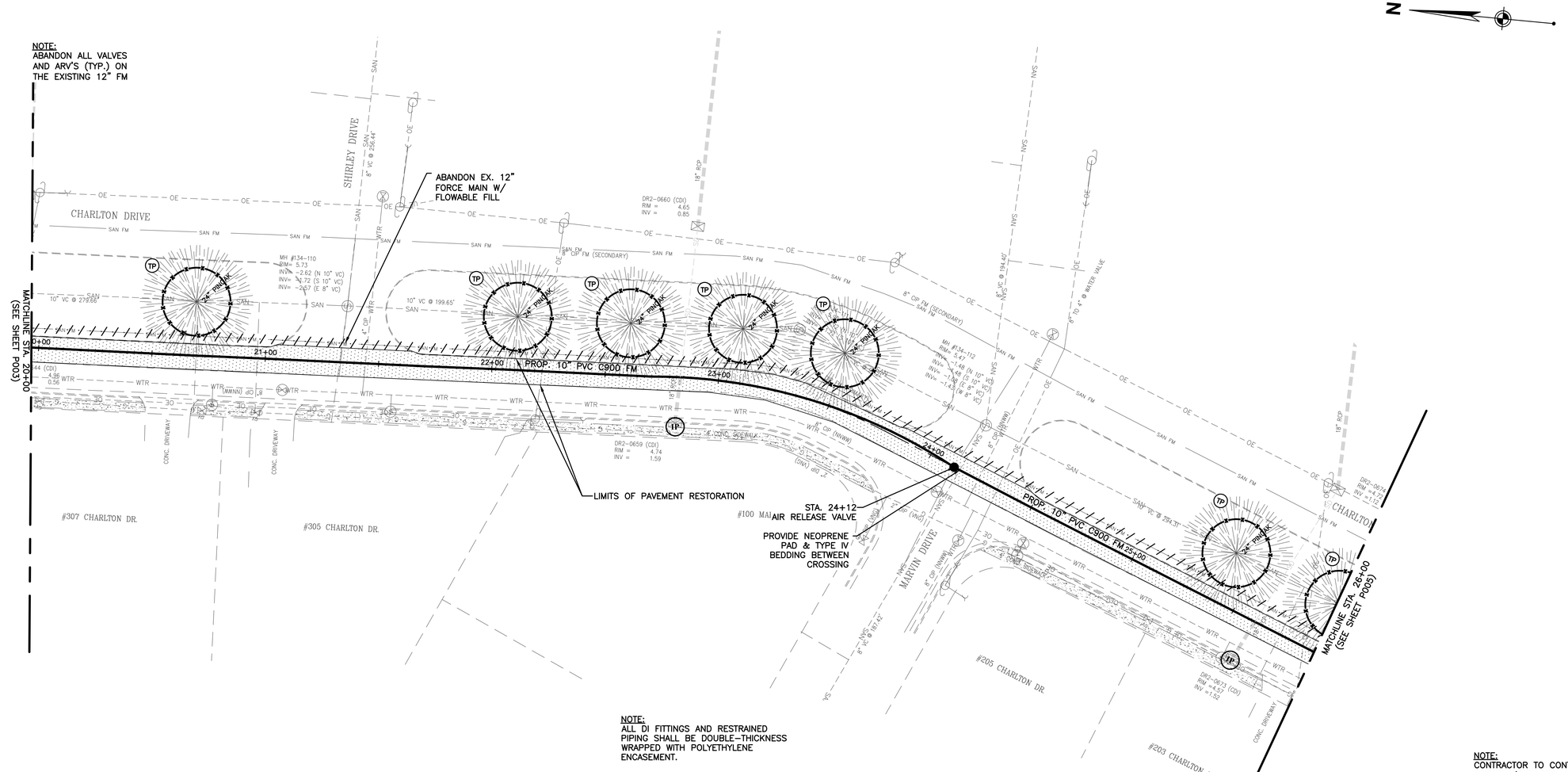
CITY OF HAMPTON, VIRGINIA

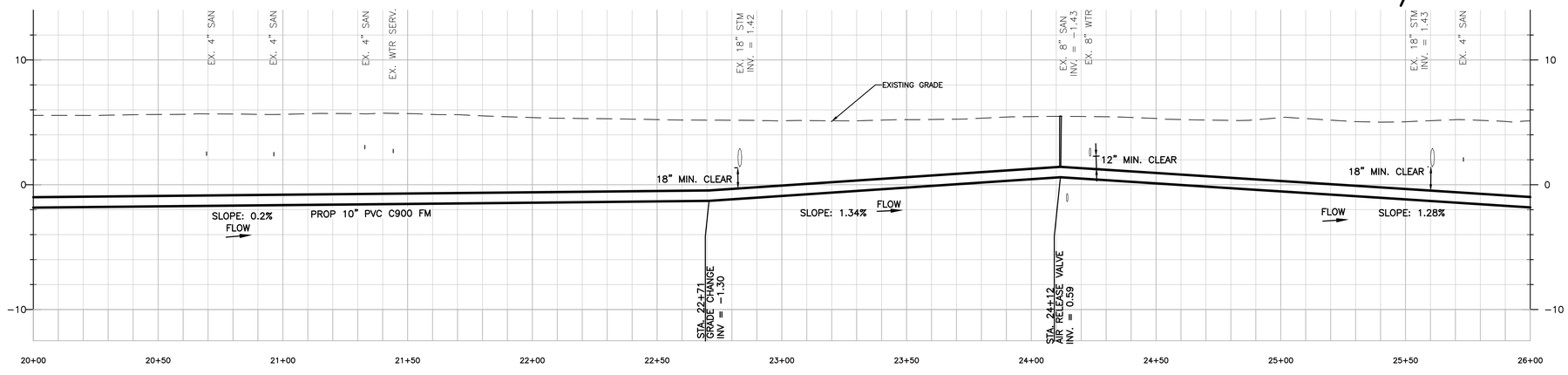
PUBLIC WORKS

PLAN & PROFILE

SHEET NO.

P003





PROFILE VIEW: CHARLTON FM – P004

GRAPHIC SCALES IN FEET
0 25 50 75
5 10 15

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
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CKD. JBE

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WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

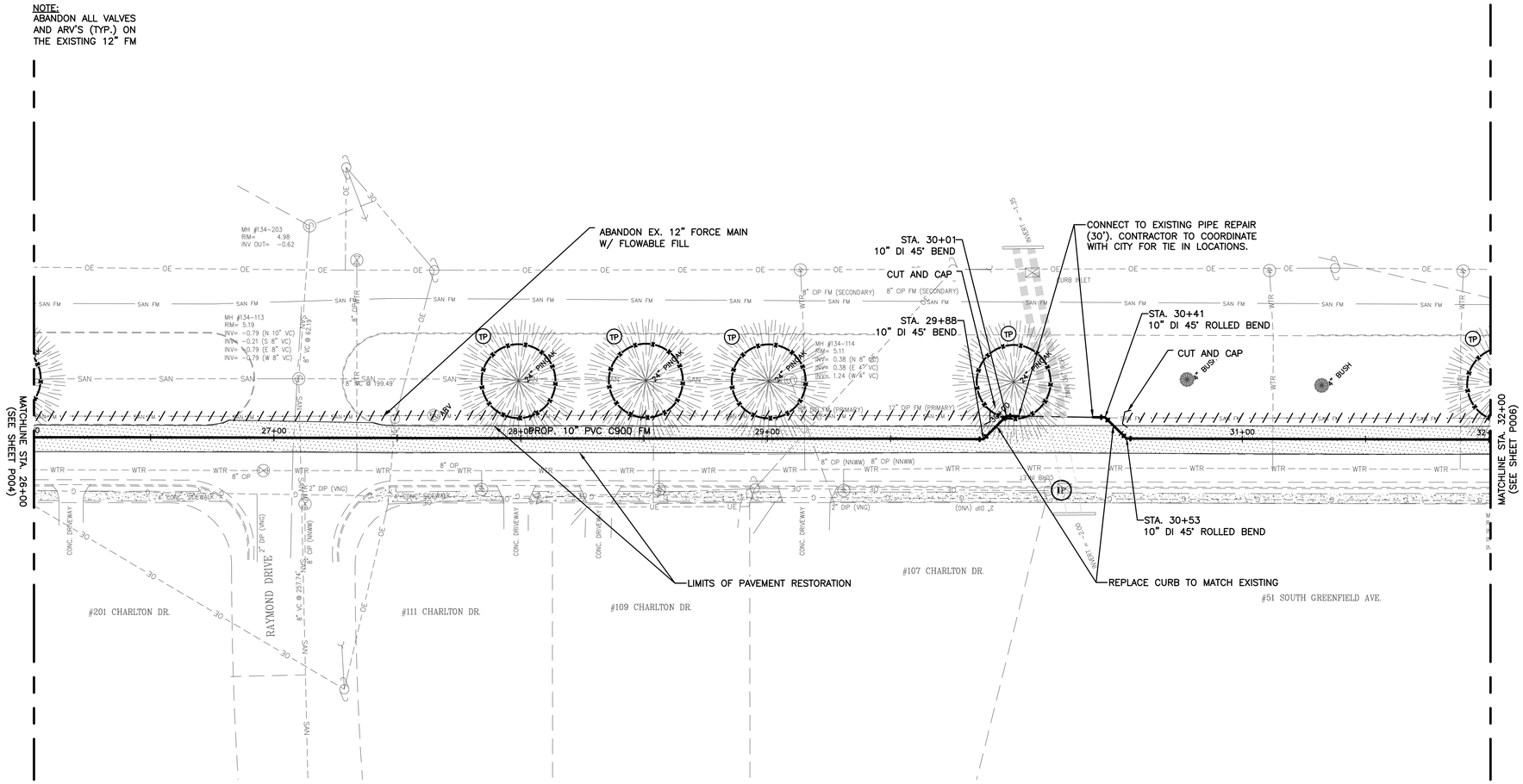
PUBLIC WORKS

PLAN & PROFILE

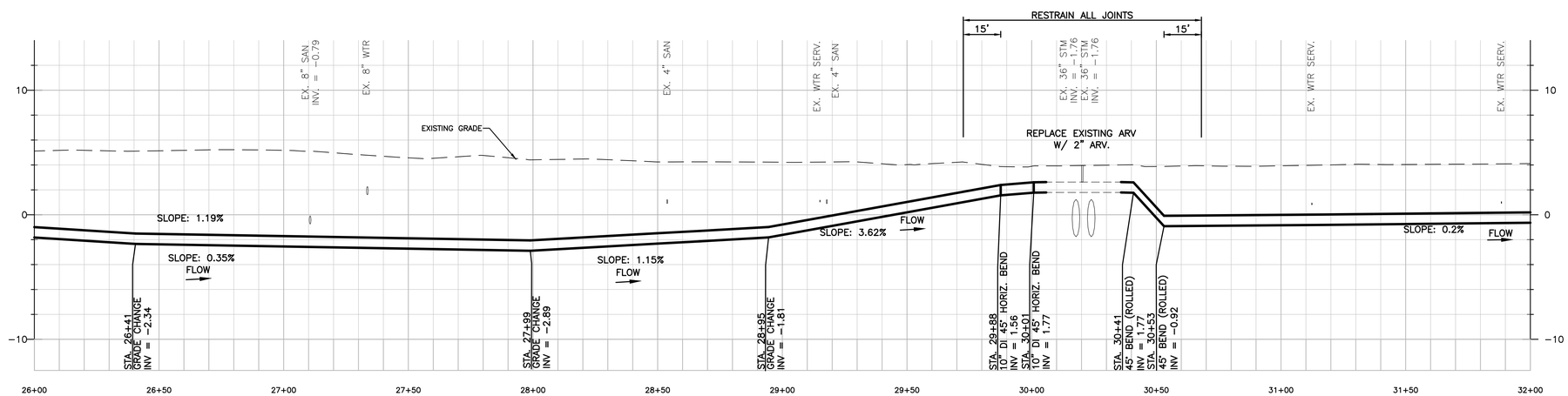
SHEET NO.

P004

NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM



NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: CHARLTON FM – P005

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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757.549.3549
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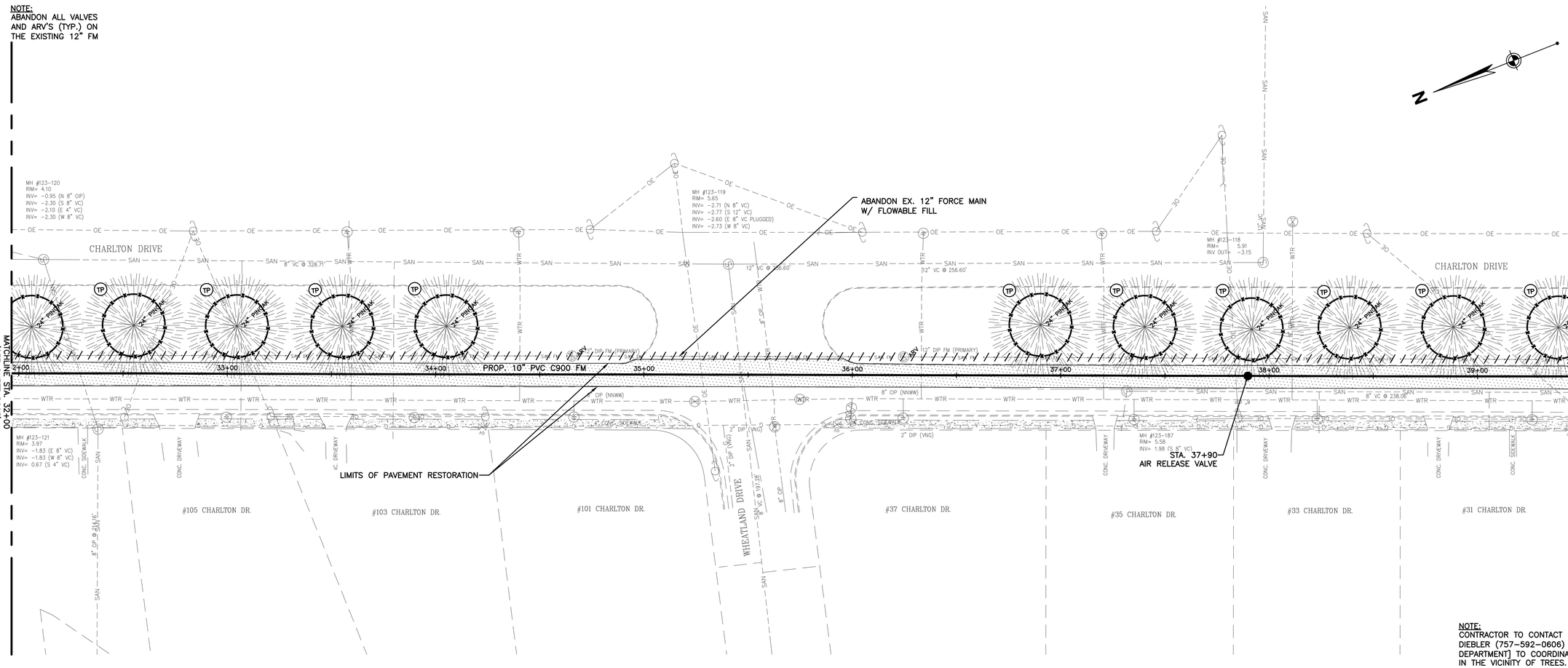
WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

PLAN & PROFILE

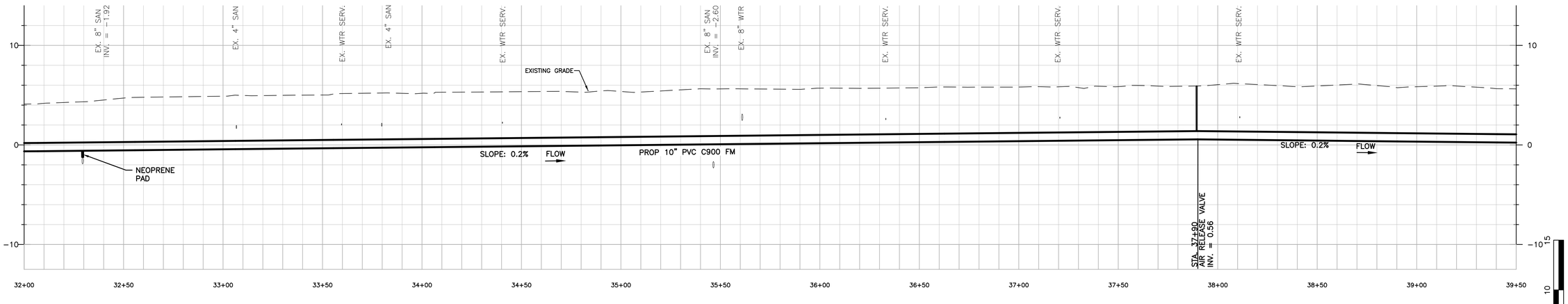
SHEET NO.
P005

NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM



NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: CHARLTON FM – P006

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES M. WOOLPERT
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

PLAN & PROFILE

SHEET NO.

P006

NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM

ABANDON EX. 12" FORCE MAIN W/ FLOWABLE FILL

PROP. 10" PVC C900 FM (SEE SHEET P009)

LIMITS OF PAVEMENT RESTORATION

STA. 44+35
10" GATE VALVE

STA. 44+37
10" DI TEE

STA. 44+39
10" GATE VALVE

PROVIDE NEOPRENE PAD & TYP. IV BEDDING BETWEEN UTILITY CROSSING

MATCHLINE STA. 39+50 (SEE SHEET P006)

MATCHLINE STA. 47+00 (SEE SHEET P008)

CHARLTON DRIVE

WESTBROOK DRIVE

22 CHARLTON DRIVE LOT # 006

5 WESTBROOK DRIVE LOT # 001

#29 CHARLTON DR.

#27 CHARLTON DR.

#25 CHARLTON DR.

#23 CHARLTON DR.

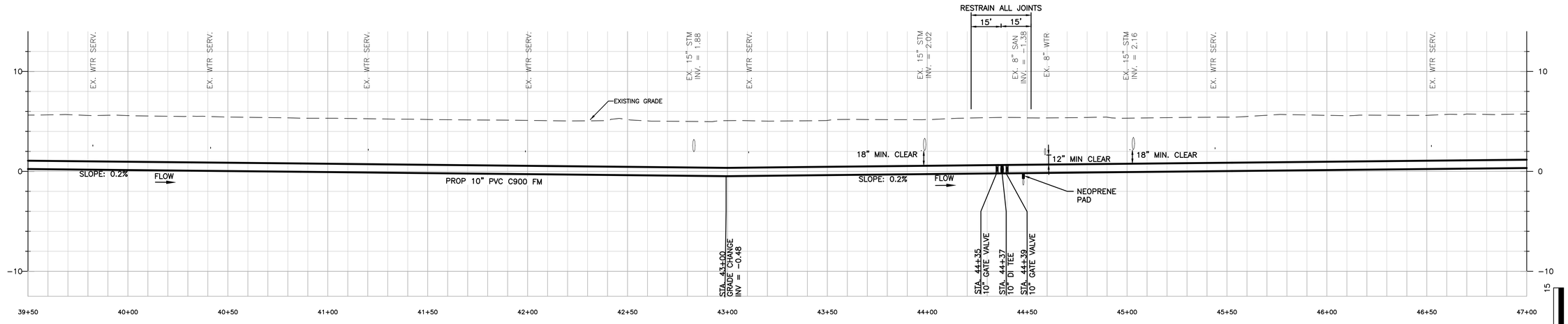
#21 CHARLTON DR.

#17 CHARLTON DR.

#15 CHARLTON DR.

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: CHARLTON FM – P007

GRAPHIC SCALES IN FEET
0 25 50 75

COMMONWEALTH OF VIRGINIA
JAMES M. WEBB
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540

WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

PLAN & PROFILE

SHEET NO.

P007

Layout Tab Name: P007, Images: DSCN3021.JPG; , Xrefs: 68002_TBLK.dwg; 68002_X.dwg; 68002_U.dwg
Last Saved By:obrien, 3/31/2015 8:49:47 AM
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NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM

ABANDON EX. 12" FORCE MAIN W/ FLOWABLE FILL

CONNECT TO EXIST 10" FM

STA. 53+96
10" DI 45° HORIZ BEND
CUT AND CAP

STA. 54+01
AIR RELEASE VALVE

STA. 53+84
10" DI 45° HORIZ BEND

MATCHLINE STA. 47+00
(SEE SHEET P007)

CHARLTON DRIVE

PROP. 10" PVC C900 FM

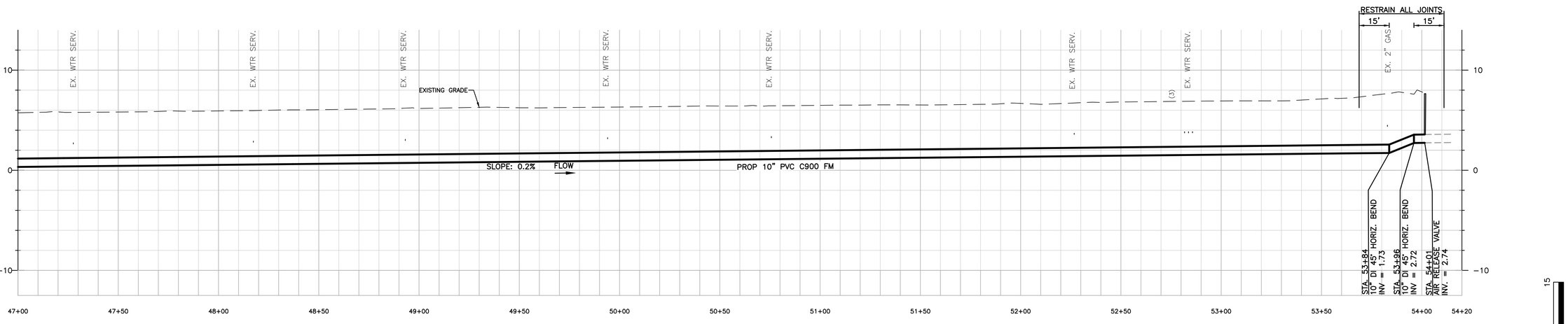
#13 CHARLTON DR. | #11 CHARLTON DR. | #9 CHARLTON DR. | #7 CHARLTON DR. | #5 CHARLTON DR. | #3 CHARLTON DR. | #1 CHARLTON DR. | #900 W. MERCURY BLVD.

LIMITS OF PAVEMENT RESTORATION

N. MERCURY BOULEVARD

NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.



PROFILE VIEW: CHARLTON FM – P008

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE
676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540

PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

PLAN & PROFILE

SHEET NO.

P008

Layout Tab Name: P008, Images: DSCN3021.JPG; Xrefs: 68002_TBLK.dwg; 68002_X.dwg; 68002_U.dwg
Last Saved By:obrien, 3/31/2015 8:49:47 AM
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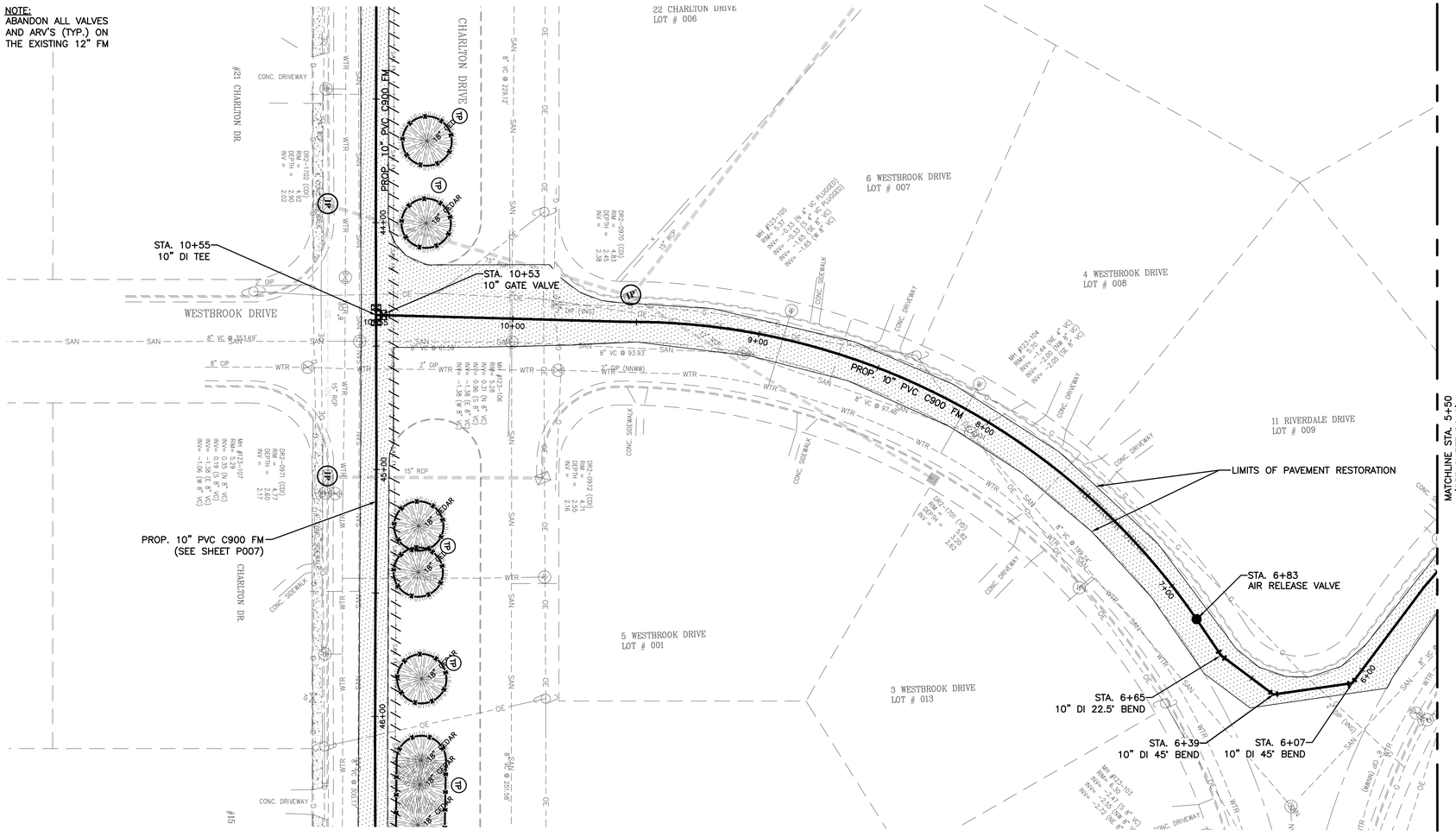
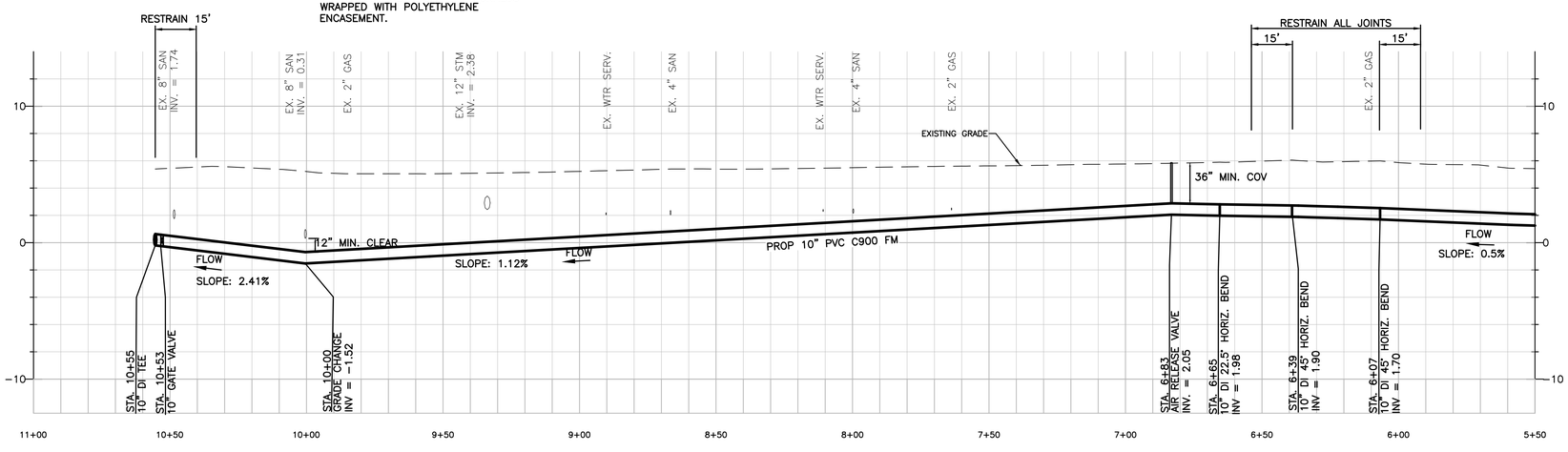
NOTE:
ABANDON ALL VALVES AND ARV'S (TYP.) ON THE EXISTING 12" FM



NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: RIVERDALE FM – P009

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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757.549.3549
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WOOLPERT
DESIGN | CONSULTING | INFRASTRUCTURE

PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

PLAN & PROFILE

SHEET NO.
P009

Layout Tab Name: P009, Images: DSCN3021.JPG; , Xrefs: 68002_TBLK.dwg; 68002_X.dwg; 68002_U.dwg
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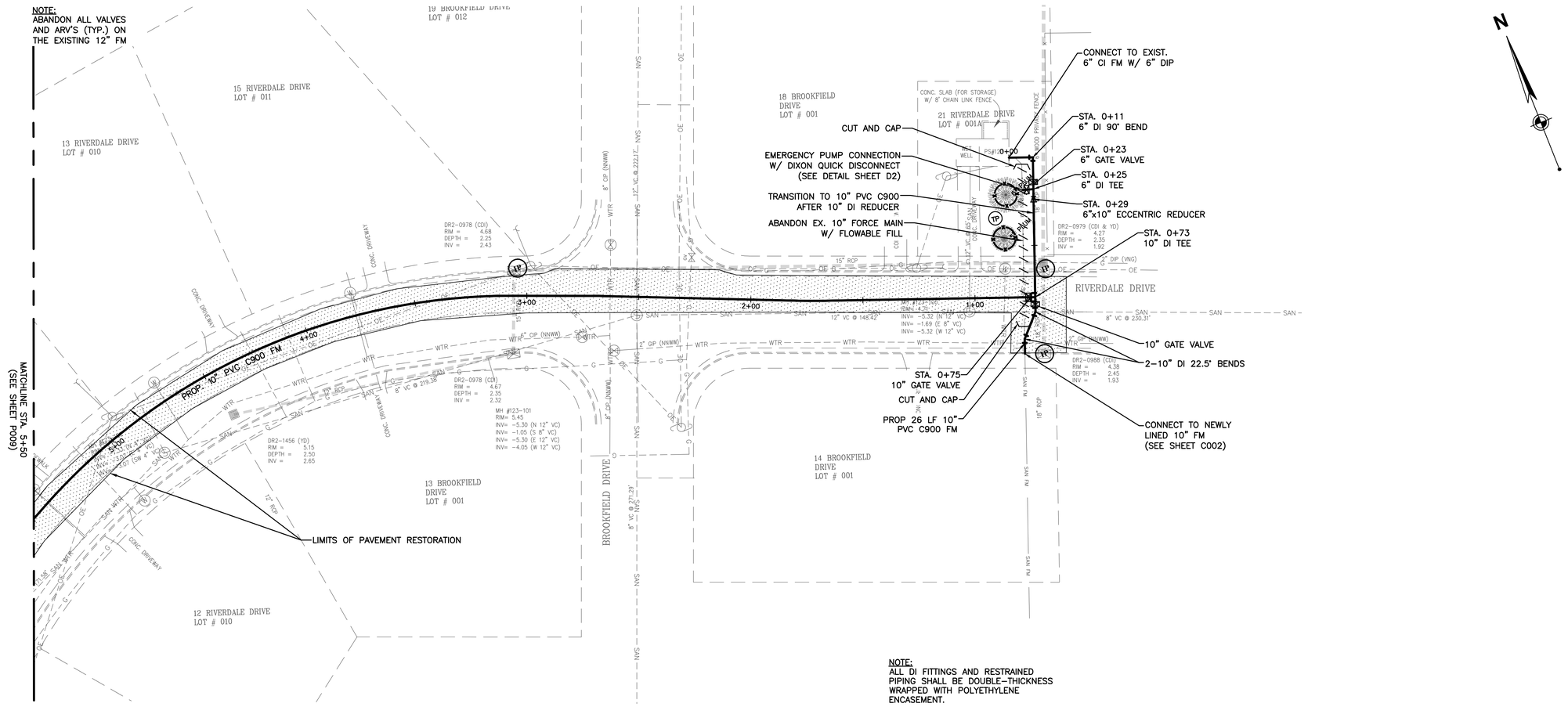
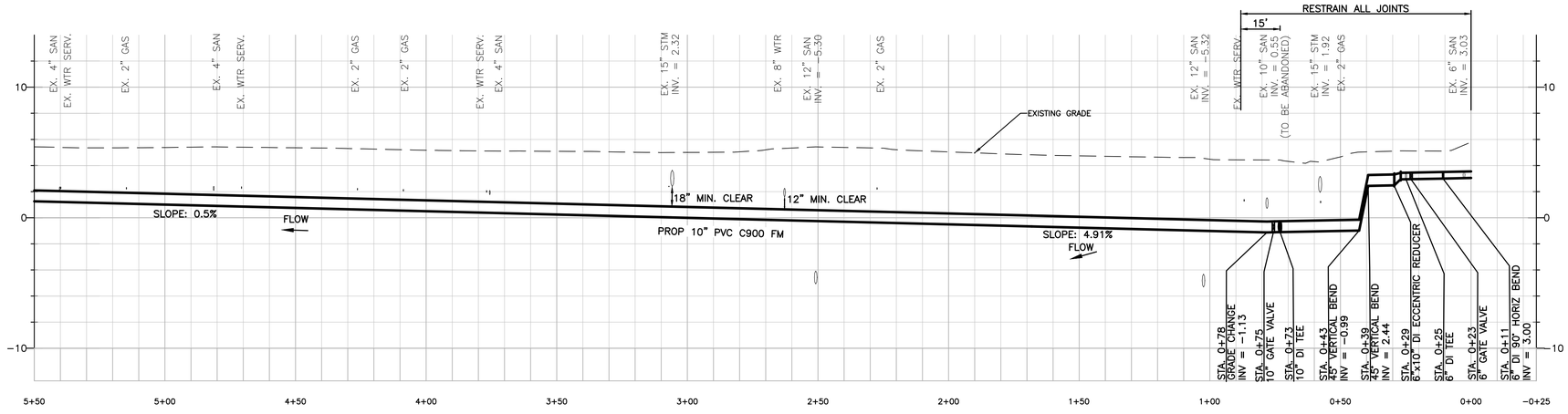


NOTE:
ALL DI FITTINGS AND RESTRAINED PIPING SHALL BE DOUBLE-THICKNESS WRAPPED WITH POLYETHYLENE ENCASEMENT.



PROFILE VIEW: RIVERDALE FM – P010

NOTE:
CONTRACTOR TO CONTACT MIKE DIEBLER (757-592-0606) [PARKS DEPARTMENT] TO COORDINATE WORK IN THE VICINITY OF TREES.

GRAPHIC SCALES IN FEET
0 25 50 75
15 10 5

COMMONWEALTH OF VIRGINIA
JAMES E. KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540
WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

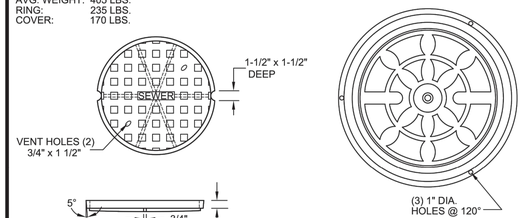
PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

PLAN & PROFILE

SHEET NO.
P010

AVG. WEIGHT: 405 LBS.
RING: 235 LBS.
COVER: 170 LBS.



NOTES:

1. CAPITOL FOUNDRY DESIGN NO. MH-C-21-CH, OR EQUAL.
2. CASTINGS SHALL BE COATED WITH ASPHALTIC VARNISH.
3. INSERT REQUIRED FOR SANITARY SEWER MANHOLES ONLY. USE "PARSON ENVIRONMENTAL OR "RAINSTOPPER" BRAND.
5. WHEN WATERTIGHT MANHOLES ARE SPECIFIED, USE CAPITOL FOUNDRY MH-3000-WT, OR EQUAL.
6. CASTINGS ARE TO BE SHOT BLASTED.
7. CASTINGS ARE TO BE ASTM A-48 CLASS 30.
8. MACHINE SEATING SURFACE ON BOTH FRAME AND COVER.
9. TOLERANCE IS TO BE +/- 1/8"
10. USE OF A 4" FRAME AND COVER REQUIRES PRIOR APPROVAL FROM THE DIRECTOR OF PUBLIC WORKS OR DESIGNEE.

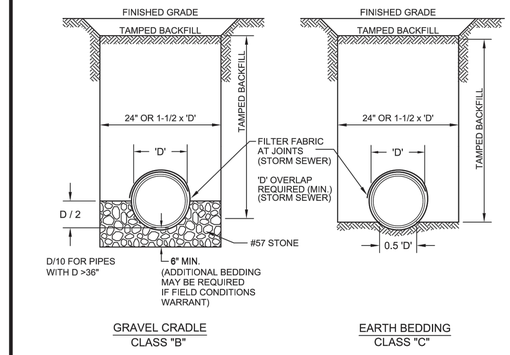
Manhole Frame & Cover

CITY OF HAMPTON, VA - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

MH

Revised: June 29, 2012



NOTES:

STORM SEWER:

1. PIPE IS TO BE CONCRETE ASTM C-76 CLASS III, WHERE SUBJECT TO TRAFFIC. CLASS II MAY BE USED OTHERWISE.
2. JOINTS ARE TO BE TONGUE AND GROOVE WITH RUBBER COMPRESSION JOINTS OR BUTYL - RUBBER SIMILAR TO BUTYL-TITE OR OTHER APPROVED EQUAL COMPLYING TO FEDERAL SS-S-210-A.
3. PIPE WITH LIFT HOLES IS NOT ACCEPTABLE.

SANITARY SEWER:

1. PIPE IS TO BE SDR 26 PIPE OR DUCTILE IRON WITH MECHANICAL OR PUSH ON JOINTS. LATERALS ARE TO BE SDR 26 OR DUCTILE IRON.
2. JOINTS WILL BE MADE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

GENERAL:

1. CLASS "B" BEDDING IS REQUIRED UNDER ALL PIPES UNLESS OTHERWISE DIRECTED BY THE DIRECTOR OF PUBLIC WORKS OR DESIGNEE.
2. BACKFILL IS TO BE IN ACCORDANCE WITH HAMPTON STANDARD PC.
3. TRENCH IS TO BE FREE OF WATER PRIOR TO THE INSTALLATION OF ANY PIPE.

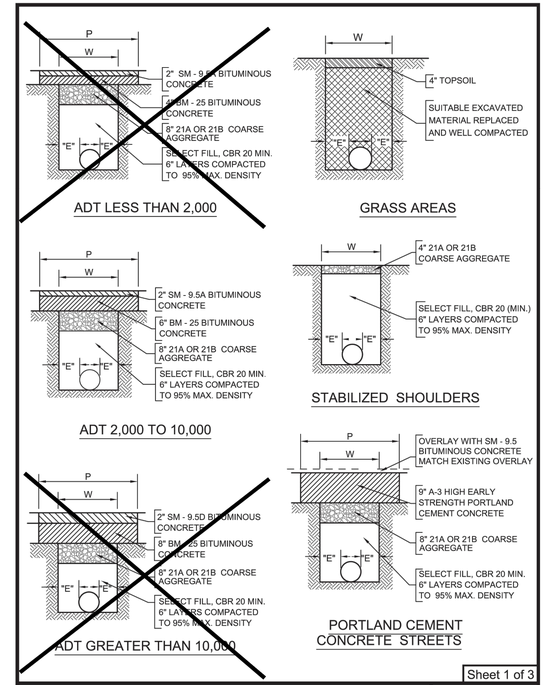
Pipe Bedding

CITY OF HAMPTON, VA. - DESIGN & CONSTRUCTION STANDARDS

October 2, 1009

PB

Revised: June 29, 2012



Sheet 1 of 3

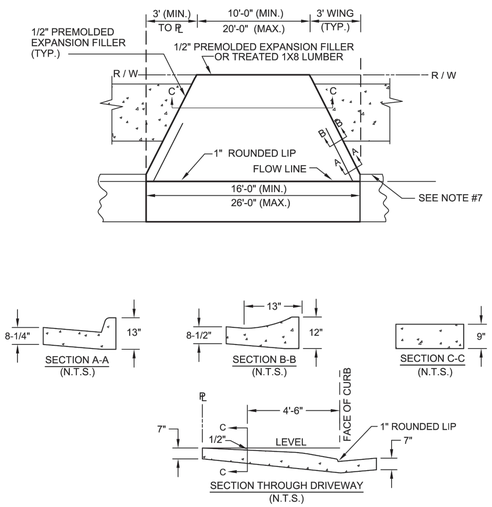
Pavement & Site Restoration

CITY OF HAMPTON, VA - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

PC

FOR USE ON STREETS DEVELOPED PRIOR TO 2010



Sheet 1 of 2

Residential Driveway Entrance

CITY OF HAMPTON - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

VE - 1

Revised: June 29, 2012

NOTES FOR SHEET 1:

1. THESE DETAILS SHOW MINIMUM STANDARDS. PAVEMENT REPAIR WILL IN NO CASE RESULT IN A PAVED SECTION LESS THAN THAT REMOVED.
2. REFER TO CURRENT VDOT ROAD & BRIDGE SPECIFICATIONS FOR SELECT MATERIAL, 21A OR 21B COARSE AGGREGATE, PORTLAND CEMENT CONCRETE AND BITUMINOUS MATERIALS
3. PAVEMENT TO BE REMOVED SHALL BE SAW CUT USING APPROPRIATE EQUIPMENT TO PROVIDE A STRAIGHT NEAT EDGE.
4. ALL OTHER DISTURBED AREAS, CURBS, WALKS, ETC., SHALL BE RESTORED TO AS GOOD, OR BETTER THAN, THAT WHICH EXISTED.
5. FERTILIZER SHALL BE COMMERCIAL 10-20-10; LIME SHALL BE PULVERIZED AGRICULTURAL LIMESTONE.
6. SEED SHALL BE TALL FESCUE OR BERMUDAGRASS (SEASONALLY DEPENDENT).
7. OVERLAP EXISTING GEOTEXTILE FABRIC PATCHES 6" MIN. ON EACH SIDE OF TRENCH OPENING.
8. "E" DISTANCES:
   12" FOR 27" TO 36" PIPES
   9" FOR 6" TO 24" PIPES
   5" FOR 4" PIPES
9. MINIMUM PATCH WIDTH:
   W = NOMINAL PIPE DIA + 2E
   P = W +24"

NOTES FOR SHEET 2:

1. ALL BACKFILL LOCATED WITHIN THE VEHICULAR LOAD ZONE IS TO BE PLACED IN LIFTS NOT TO EXCEED 8" AND COMPACTED TO 95% OF THE MAXIMUM THEORETICAL DENSITY, DETERMINED IN ACCORDANCE WITH VTM-1 METHOD.
2. ALL BACKFILL OUTSIDE THE VEHICULAR LOAD ZONE BUT LOCATED IN THE RIGHT OF WAY IS TO BE COMPACTED TO 90% OF THE MAXIMUM DENSITY IN LIFTS NOT TO EXCEED 12".
3. THE LACK OF PROPER COMPACTION EQUIPMENT OR THE USE OF IMPROPER COMPACTION METHODS SHALL BE CAUSE FOR THE IMMEDIATE SHUT DOWN OF WORK BY THE DEPARTMENT OF PUBLIC WORKS.
4. DENSITY TESTS SHALL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR WHEN REQUESTED BY THE DEPARTMENT OF PUBLIC WORKS.
5. SURFACE TOLERANCES SHALL NOT EXCEED 1/4 INCH WHEN TESTED WITH A TEN FOOT STRAIGHT EDGE PLACED AT ANY TWO CONTACTS WITH THE SURFACE. ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCE SHALL BE CORRECTED OR THE DEFECTIVE WORK REMOVED AND REPLACED WITH NEW MATERIAL BY THE CONTRACTOR. THIS TOLERANCE SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY THE DEPARTMENT OF PUBLIC WORKS.
6. CONTRACTOR IS TO MAINTAIN PAVEMENT PATCH DURING THE INITIAL SETTLEMENT PHASE, WHICH SHALL BE THE FIRST 3 MONTHS AFTER CONSTRUCTION OF THE INITIAL PATCH.
7. AFTER 3 - 4 MONTHS THE CONTRACTOR SHALL MILL AND OVERLAY THE INITIAL PATCH AND THE AREA EXTENDING 15' ON BOTH SIDES OF THE PATCH. THE MILL AND OVERLAY SHALL BE A MINIMUM OF 2 INCHES. THE DIRECTOR OF PUBLIC WORKS OR HIS DESIGNEE MAY WAIVE THE REQUIREMENT TO MILL AND OVERLAY THE PATCH AND SURROUNDING AREA, IF IT IS DETERMINED THE INITIAL PATCH IS CONSISTENT WITH THE REMAINING ROADWAY.
8. THE SURFACE COURSE OVERLAY (2") SHALL RE-ESTABLISH THE ORIGINAL GRADE AND PROVIDE A SMOOTH TRANSITION WITH THE EXISTING PAVEMENT.
9. EQUIPMENT TO COMPLETE THE WORK SHALL CONSIST OF A PAVER AND ROLLER TYPICALLY USED FOR FULL LANE WIDTH PAVING.

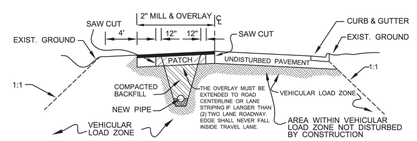
Sheet 3 of 3

Pavement & Site Restoration

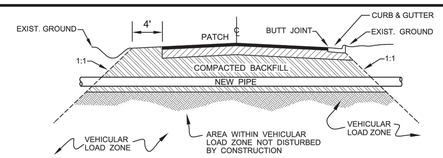
CITY OF HAMPTON, VA - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

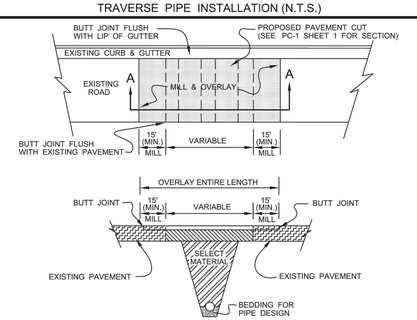
PC



LONGITUDINAL PIPE INSTALLATION (N.T.S.)



TRAVERSE PIPE INSTALLATION (N.T.S.)



SECTION A-A (N.T.S.)

Sheet 2 of 3

Pavement & Site Restoration

CITY OF HAMPTON, VA - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

PC

NOTES:

1. ALL CONCRETE IS TO BE 3,000 P.S.I. (28 DAY) AIR ENTRAINED BROOM FINISHED. EXPOSED AGGREGATE, BRICKS OR PAVER BLOCKS MAY BE USED AS AN ALTERNATE. HOWEVER, IF THE ENTRANCE IS REPLACED BY THE CITY OF HAMPTON, ONLY BROOM FINISHED CONCRETE WILL BE USED.
2. CONCRETE IS TO BE CURED WITH AASHTO APPROVED LIQUID MEMBRANE SEALANT.
3. COMPACTED SUB-BASE IS TO BE APPROVED BY INSPECTOR.
4. BRICK OR PAVER BLOCK ENTRANCES MUST BE CONSTRUCTED TO THE CITY OF HAMPTON PAV-1 OR PAV - 2 CROSS SECTION.
5. WHERE CONCRETE HAS BEEN REMOVED, NEW SIDEWALK IS TO BE FORMED AND POURED ALONG WITH THE ENTRANCE. SIDEWALK IS TO BE REMOVED, AND REPLACED, BACK TO THE NEXT CONSTRUCTION JOINT.
6. NO WATER METERS / VALVES ARE ALLOWED IN ENTRANCE. CONTACT NNWW FOR RELOCATION.
7. NO SANITARY SEWER CLEANOUTS ARE ALLOWED IN ENTRANCE.
8. IF THE EXISTING C & G JOINT IS WITHIN 24" OF ENTRANCE, REMOVE AND REPLACE C & G TO THAT JOINT.
9. REFER TO CURRENT VDOT ROAD & BRIDGE SPECIFICATIONS FOR CONCRETE POURING STANDARDS.
10. MONOLITHIC POUR OF DRIVEWAY AND CURB & GUTTER IS REQUIRED FOR INITIAL INSTALLATIONS (NEW SUBDIVISION, STREET RE-CONSTRUCTIONS AND FIRST TIME DRIVEWAYS WHERE EXISTING CURB AND GUTTER EXISTS). REPLACEMENT OF EXISTING DRIVEWAYS WILL BE BASED UPON THE CONDITION OF THE CURB AND GUTTER AS DETERMINED BY THE DEPARTMENT OF PUBLIC WORKS.
11. CONSTRUCTION JOINT AT CENTERLINE NOT REQUIRED FOR ENTRANCES LESS THAN 16' WIDE AT THE PROPERTY LINE.
12. ENTRANCE WINGS ARE NOT TO EXTEND BEYOND THE PROPERTY LINES.
13. THE CENTER OF THE ENTRANCE IS TO BE RADIAL TO THE CENTER OF A CUL-DE-SAC, OR WHEN CONSTRUCTED ALONG A CURVED ROAD.

Sheet 2 of 2

Residential Driveway Entrance

CITY OF HAMPTON - DESIGN & CONSTRUCTION STANDARDS

October 2, 2009

VE - 1

Revised: June 29, 2012

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

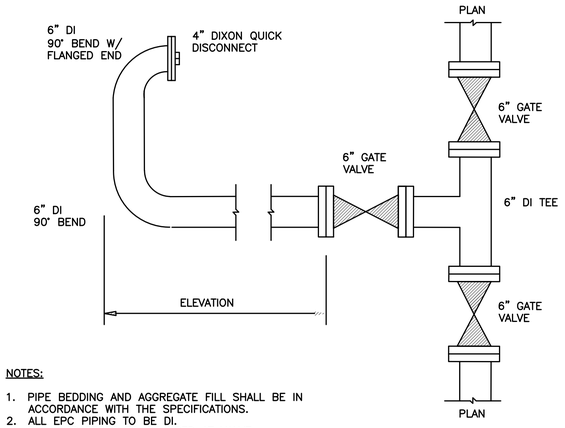
676 Independence Parkway
Suite 100
Chesapeake, VA 23320
757.549.3549
FAX: 757.549.3540

WOOLPERT
DESIGN | ENVIRONMENTAL | INFRASTRUCTURE

PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

HAMPTON DETAILS

SHEET NO.
D1

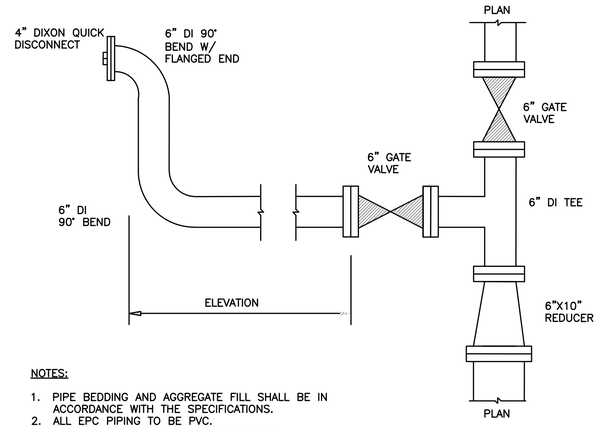


NOTES:

1. PIPE BEDDING AND AGGREGATE FILL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ALL EPC PIPING TO BE DI.
3. DI MJ ADAPTORS TO BE USED AT VALVE CONNECTIONS.
4. MEASUREMENT AND PAYMENT FOR EPC INCLUDES ALL PIPE AND FITTINGS AFTER 6" GATE VALVE.

PUMP STATION 134
EMERGENCY PUMP CONNECTION

(NOT TO SCALE)

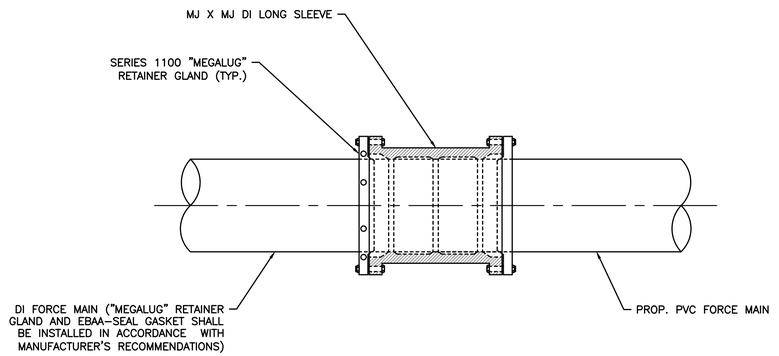


NOTES:

1. PIPE BEDDING AND AGGREGATE FILL SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS.
2. ALL EPC PIPING TO BE PVC.
3. DI MJ ADAPTORS TO BE USED AT VALVE CONNECTIONS.
4. MEASUREMENT AND PAYMENT FOR EPC INCLUDES ALL PIPE AND FITTINGS AFTER 6" GATE VALVE.

PUMP STATION 123
EMERGENCY PUMP CONNECTION

(NOT TO SCALE)



DUCTILE IRON TO PVC PIPE
CONNECTION DETAIL

(NOT TO SCALE)

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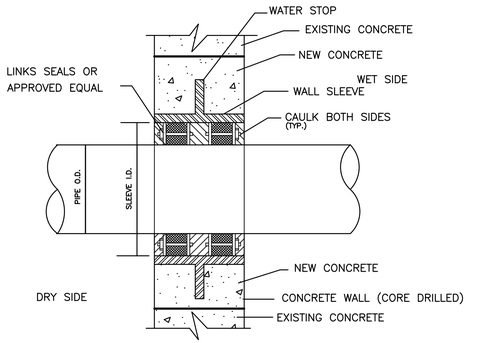
DETAILS

SHEET NO.

D2

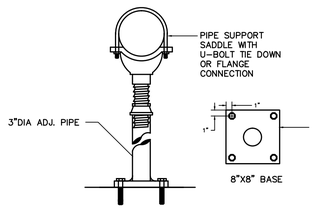


NOTE:

PROVIDE THE APPROPRIATE LINK SEAL MODEL OR APPROVED EQUAL. FILL ALL VOIDS ON BOTH SIDES WITH NON SHRINK HYDRAULIC CEMENT SMOOTH TO WALL FINISH.

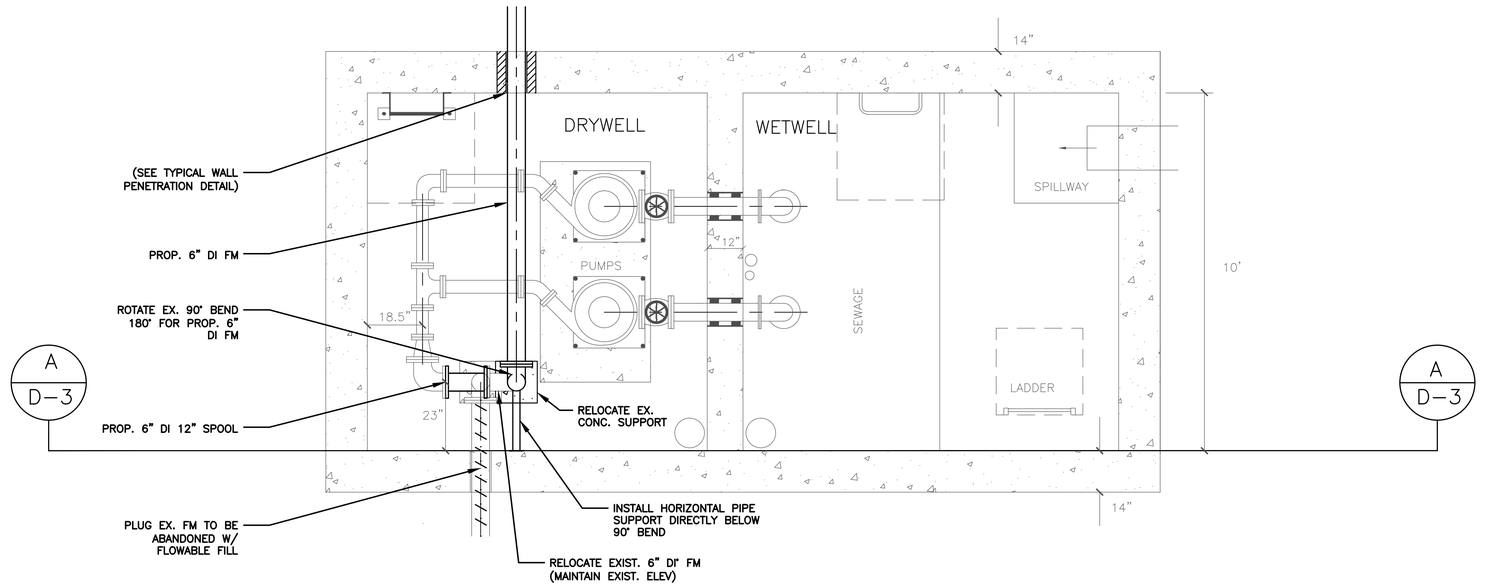
TYPICAL WALL PENETRATION DETAIL

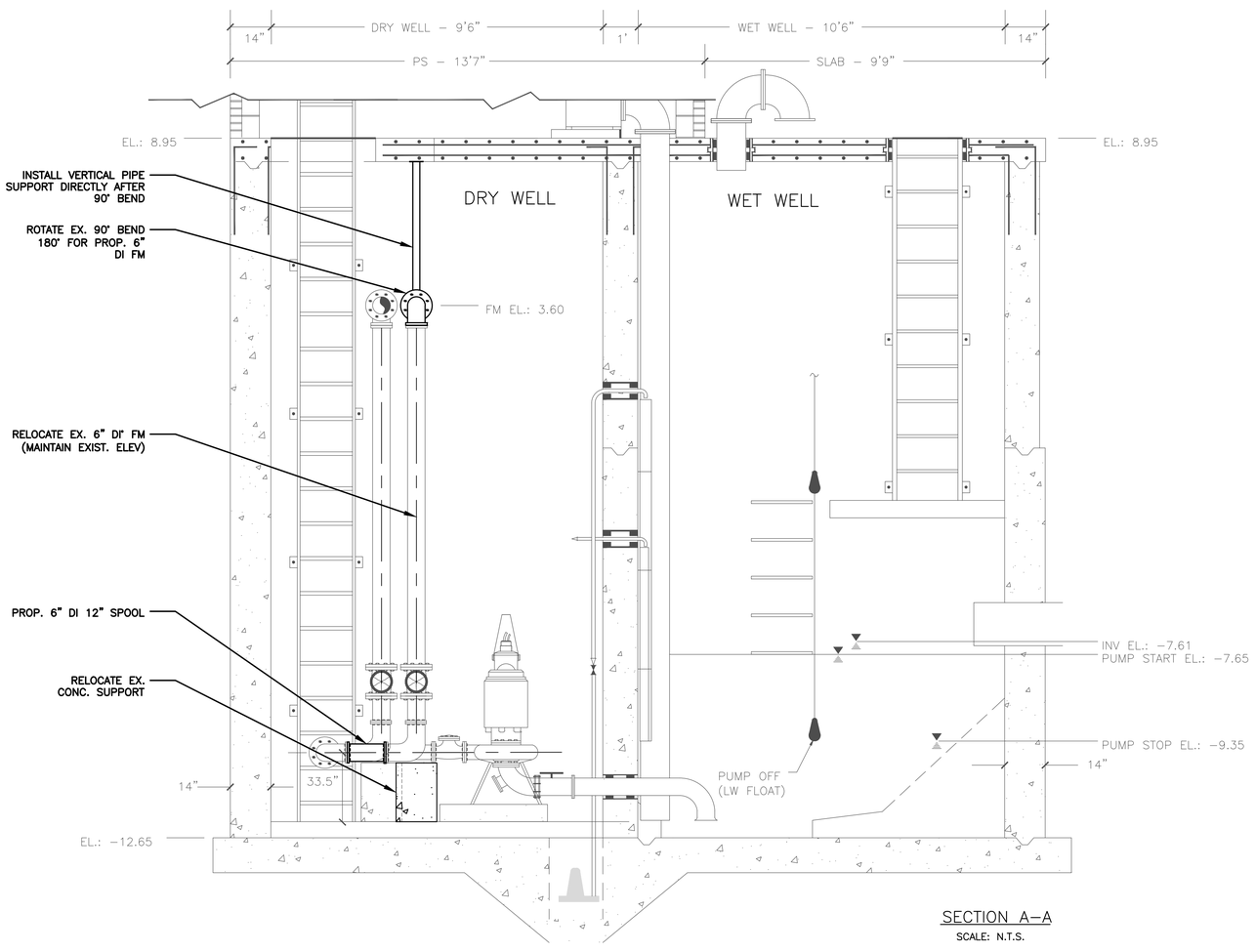
SCALE: N.T.S.



ADJUSTABLE PIPE SUPPORT

SCALE: N.T.S.





SECTION A–A

SCALE: N.T.S.

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PUMP STATION 134 & 123 FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

PUMP STATION NO.134

SHEET NO.

D3

EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS:

MS-1 Permanent or temporary soil stabilization shall be applied to denuded areas within seven (7) days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven (7) days to denuded areas that may not be at final grade but will remain dormant for longer than thirty (30) days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one (1) year.

MS-2 During construction of the project, soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.

MS-3 A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.

MS-4 Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land-disturbing activity and shall be made functional before upslope land disturbance takes place.

MS-5 Stabilization measures shall be applied to earthen structures such as dams, dikes, and diversions immediately after installation.

MS-6 Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.

A. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.

B. Surface runoff from disturbed areas that is compromised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. the minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25 year storm of 24 hour duration. runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.

MS-7 Cut and fill slopes shall be constructed in a manner that will minimize erosion. slopes that are found to be eroding excessively within one (1) year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.

MS-8 Concentrated runoff shall not flow down cut or fill slopes unless contained within adequate temporary or permanent channel, flume or slope drain structure.

MS-9 Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.

MS-10 All storm sewer inlets that are made operable during construction shall be protected so that sediment-laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.

MS-11 Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving

MS-12 When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. nonerodible material shall be used in the construction of causeways and cofferdams. earthen fill may be used for these structures if armored by nonerodible cover material.

MS-13 When a live water course must be crossed by construction vehicles more than twice (2) in any six (6) month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided.

MS-14 All applicable federal, state and local regulations pertaining to working in or crossing live watercourses shall be met.

MS-15 The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.

MS-16 Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria.

A. No more than 500 linear feet of trench may be opened at one time.
B. Excavated material shall be placed on the uphill side of trenches.
C. Effluent from dewatering devices shall be filtered or passed through an approved sediment trapping device, or both and discharged in a manner that does not adversely affect flowing streams or offsite property.
D. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
E. Restabilization shall be accomplished in accordance with these regulations.
F. Applicable safety regulations shall be complied with.

EROSION AND SEDIMENT CONTROL MINIMUM STANDARDS (CONT'D.):

MS-17 Where construction vehicle access routes intersect paved or public roads provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment has been removed in this manner. This provision shall apply to individual development lots as well as to larger land-disturbing activities.

MS-18 All temporary erosion and sediment control measures shall be removed within thirty (30) days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the local program authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanetly stablized to prevent furthererosion and sedimentation.

MS-19 Properties and waterways downstream from development sites shall be rotected from sediment despositions, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of twenty-four (24) hour duration in accordance with the following standards and criteria:

A. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man-made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.

B. Adequacy of all channels and pipes shall be verified in the following manner:
   1. The applicant shall demonstrate that the total drainage area to the point of analyses within the channel is one hundred (100) times greater than the contributing drainage area of the project in question; or
   2. (a) Natural channels shall be analyzed by the use of a two (2) year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks.
      (b) All previously constructed man-made channels shall be analyzed by the use of a ten (10) year storm to verify that stormwater will not overtop its banks and by the use of a two (2) year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
      (c) PIpes and storm sewer systems shall be ananlyzed by the use of a ten (10) year storm to verify that stormwater will be contained within the pipe or system.

C. If existing natural receiving channels or previously constructed man-made channels or pipes are not adequate, the applicant shall:
   1. Improve the channels to a condition where ten (10) year storm will not overtop the banks and a two (2) year storm will not cause erosion to the channel bed or banks; or
   2. Improve the pipe or pipe system to a condition where the ten (10) year storm is contained within the appurtenances;
   3. Develop a site design that will not cause the pre-development peak runoff rate from a two (2) year storm to increase when runoff outfalls into a natural channel or will not cause the pre-development peak runoff rate from a ten (10) year storm to increase when runoff outfalls into a man-made channel; or
   4. Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the plan-approving authority to prevent downstream erosion.

D. The applicant shall provide evidence of permission to make the improvements.

E. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development conditions of the subject project.

F. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the locality of a plan for maintenance of the detention facilities. the plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.

G. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipaters shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.

H. All on-site channels must be verified to be adequate.
   I. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system or to a detention facility.

J. In applying these stormwater management criteria, individual lots or parcels in a residentia, commercial or industrial development shall not be considered to be separate developmentprojects. Instead, the development, as a whole, shall be considered to be a single development project. hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.

K. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.

TABLE 6-1

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK and Virginia regulations VR 625-02-00 & 4VAC 50-30-40 Erosion and Sediment Control Regulations.

ES-2: The plan approving authority must be notified one (1) week prior to the pre-construction conference, one (1) week prior to commencement of the land disturbing activity, and one (1) week prior to the final inspection.

ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing.

ES-4: A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.

ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the Contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

ES-6: The Contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.

ES-7: All disturbed areas are to drain to approved sediment control measures at all times during land disturbing activities and during site development until final stabilization is achieved.

ES-8: During dewatering operations, water will be pumped into an approvedfiltering device.

ES-9: The contractor shall inspect all erosion control measures periodically and after each runoff-producing rainfall event. any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.

COMMONWEALTH OF VIRGINIA
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10-13-14

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FORCE MAIN MAINTENANCE PLAN

CITY OF HAMPTON, VIRGINIA

PUBLIC WORKS

EROSION & SEDIMENT CONTROL NOTES

SHEET NO.

ES1

Layout Tab Name: ES1, Images: , Xrefs: 68002_TBLK.dwg
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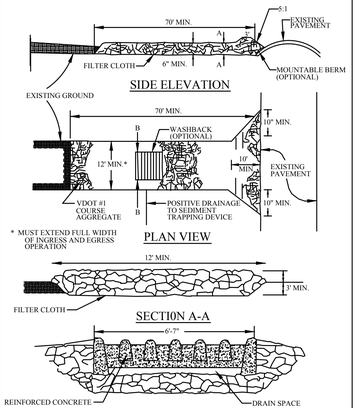
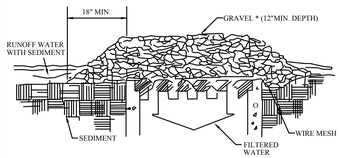
STONE CONSTRUCTION ENTRANCE

CE



GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

IP



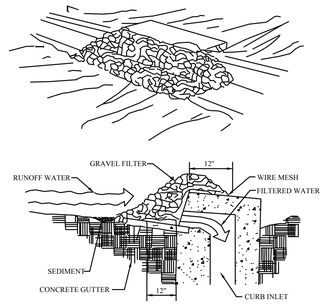
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIECE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE.

GRAVEL CURB INLET SEDIMENT FILTER

IP



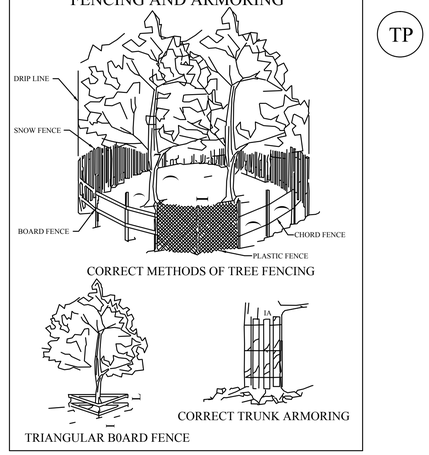
SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES ANS UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE.

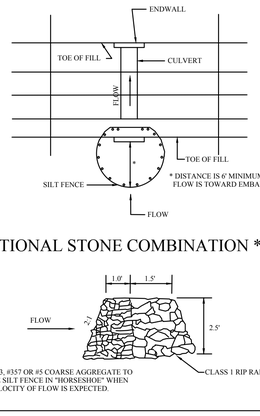
FENCING AND ARMORING

TP



SILT FENCE CULVERT INLET PROTECTION

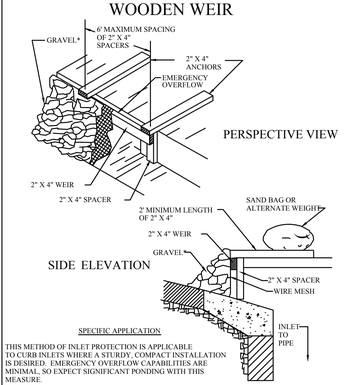
CIP



** VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN "HORSESHOE" WHEN HIGH VELOCITY OF FLOW IS EXPECTED.

CURB INLET PROTECTION WITH 2 - INCH X 4 - INCH WOODEN WEIR

IP



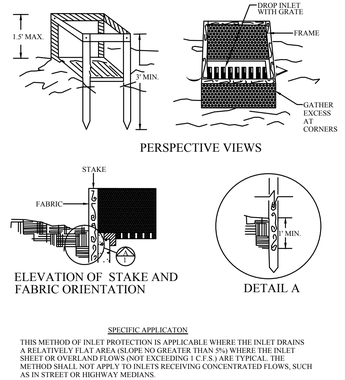
SPECIFIC APPLICATON

THIS METHOD OF INLET PROTECTION IS APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

* GRAVEL SHALL BE VDOT COARS AGGREGATE #3, #357 OR #5.

SILT FENCE DROP INLET PROTECTION

IP

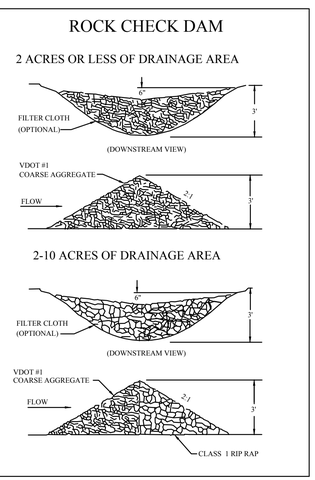


SPECIFIC APPLICATON

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

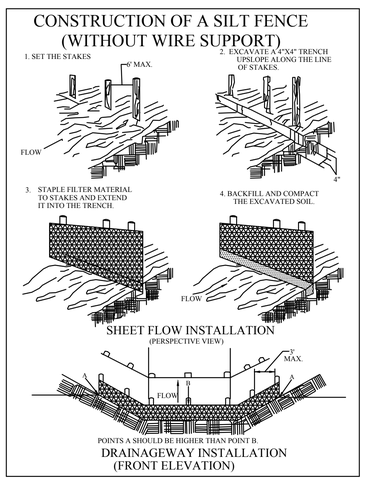
ROCK CHECK DAM

CD



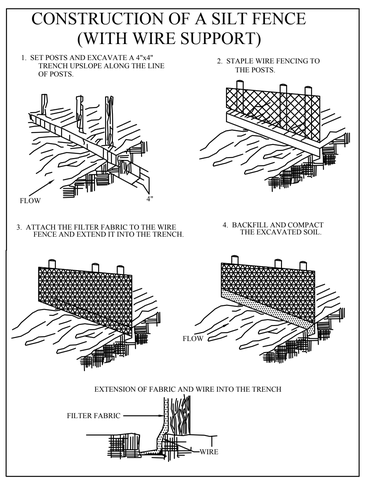
CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)

SF



CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)

SF



NOTE: SILT FENCE FABRIC SHALL BE 36" TALL, STAKED WITH 2"X2"X5" HARDWOOD STAKES ON 6' CENTERS.

TABLE 3.32-E
(REVISED JUNE 2003)
PERMANENT SEEDING SPECIFICATION FOR COASTAL PLAIN AREA

SEED[1]		
LAND USE	**SPECIES**	**APPLICATION RATES**
MINIMUM CARE LAWN COMMERCIAL OR RESIDENTIAL	TALL FESCUE[1] or BERMUDAGRASS[1]	175-200 LBS 75 LBS
HIGH-MAINTENANCE LAWN	TALL FESCUE[1] or BERMUDAGRASS[1] (seed) or BERMUDAGRASS[1] (by other vegetative establishment method, see Std. & Spec. 3.34)	200-250 LBS 40 LBS (UNHULLED) 30 LBS (HULLED)
GENERAL SLOPE (3:1 OR LESS)	TALL FESCUE[1] RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP[2]	128 LBS 2 LBS 20 LBS TOTAL 150 LBS
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	TALL FESCUE[1] BERMUDAGRASS[1] RED TOP GRASS OR CREEPING RED FESCUE SEASONAL NURSE CROP[2] SERICEA LESPEDEZA[3]	93-108 LBS 0-15 LBS 2 LBS 20 LBS 20 LBS TOTAL 150 LBS

1 - WHEN SELECTING VARIETIES OF TURFGRASS, USE THE VIRGINIA CROP IMPROVEMENT ASSOCIATION (VCIA) RECCOMENDED TURFGRASS VARIETY LIST. QUALITY SEED WILL BEAR A LABEL INDICATING THAT THEY ARE APPROVED BY VCIA. A CURRENT TURFGRASS VARIETY LIST IS AVAILABLE AT THE LOCAL COUNTY EXTENSION OFFICE OR THROUGH VCIA AT 804-746-4884 OR AT HTTP://SUDAN.CSES.VT.EDU/HTML/TURF/TURF/PUBLICATIONS/PUBLICATIONS2.HTML

2 - USE SEASONAL NURSE CROPS IN ACCORDANCE WITH SEEDING DATES STATED BELOW:
FEBRUARY, MARCH-APRIL..... ANNUAL RYE
MAY 1ST-AUGUST..... FOXTAIL MILLET
SEPTEMBER, OCTOBER-NOVEMBER 15TH..... ANNUAL RYE
NOVEMBER 16TH- JANUARY..... WINTER RYE

3 - MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. IF WEEPING LOVEGRASS IS USED, INCLUDE IN ANY SLOPE OR LOW MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS, INCREASE TO 30-40 LBS/ACRE.

FERTILIZER & LIME
- APPLY 10-20-10 FERTILIZER AT A RATE OF 500 LBS/ACRE (OR 12 LBS/1,000 SQ. FT.)
- APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 90 LBS/1,000 SQ. FT.)

NOTE:
1. A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL PH OF SITE.
2. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING OR BY OTHER MEANS.
3. WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES AT HTTP://WWW.DCR.STATE.VA.US/SWI/E&S.HTM#PUBS

TABLE 3.31-B
(REVISED JUNE 2003)
TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS

	SEED
APPLICATION DATES	**SPECIES**
SEPT. 1 - FEB. 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM) AND CEREAL (WINTER) RYE (SECALE CEREALE)
FEB. 16 - APR. 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLORUM)
MAY 1 - AUG. 31	GERMAN MILLET

FERTILIZER AND LIME
- APPLY 10-10-10 FERTILIZER AT A RATE OF 450 LBS./ACRE (OR 10 LBS./1,000 SQ. FT.)
- APPLY PULVERIZED AGRICULTURAL LIMESTONE AT A RATE OF 2 TONS/ACRE (OR 90 LBS./1,000 SQ. FT.)

NOTE:
1. A SOIL TEST IS NECESSARY TO DETERMINE THE ACTUAL AMOUNT OF LIME REQUIRED TO ADJUST THE SOIL PH OF SITE.
2. INCORPORATE THE LIME AND FERTILIZER INTO THE TOP 4-6 INCHES OF THE SOIL BY DISKING OR BY OTHER MEANS.
3. WHEN APPLYING SLOWLY AVAILABLE NITROGEN, USE RATES AVAILABLE IN EROSION & SEDIMENT CONTROL TECHNICAL BULLETIN #4, 2003 NUTRIENT MANAGEMENT FOR DEVELOPMENT SITES AT HTTP://WWW.DCR.STATE.VA.US/SWI/E&S.HTM#PUBS.

COMMONWEALTH OF VIRGINIA
JAMES [illegible] KING
Lic. No. 031109
PROFESSIONAL ENGINEER
10-13-14

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

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WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

EROSION & SEDIMENT CONTROL DETAILS

SHEET NO.
ES2

MAINTENANCE OF TRAFFIC GENERAL NOTES:

1. THIS PLAN IS PROVIDED BY THE OWNER IN ORDER TO ESTABLISH MINIMUM, ACCEPTABLE REQUIREMENTS FOR TRAFFIC CONTROL AND TO AID IN THE INCLUSION OF THE ASSOCIATED COSTS IN THE PREPARATION OF THE BID. THIS PLAN AND THE USE THEREOF DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES OF PROTECTION OF THE WORK AND PUBLIC SAFETY.
2. ALL RESIDENCES AND BUSINESSES SHALL BE NOTIFIED BY THE CONTRACTOR THIRTY (30) DAYS IN ADVANCE OF CONSTRUCTION.
3. ANY AND ALL DEVIATIONS FROM THE TRAFFIC CONTROL PLANS SHALL BE APPROVED BY THE TRAFFIC ENGINEERING DIVISION.
4. NO WEEKEND, HOLIDAY, OR NIGHT WORK IS AUTHORIZED UNLESS APPROVED BY THE TRAFFIC ENGINEERING DIVISION, THE ENGINEER, AND THE DEPARTMENT OF PUBLIC WORKS.
5. THE CONTRACTOR SHALL NOTIFY TRAFFIC ENGINEER AT LEAST 48 HOURS PRIOR TO ANY ROAD CLOSURE, LANE CLOSURE, OR FLAGGING OPERATION AT 382–6300 (OFFICE) OR 357–1251 (PAGER).
6. ALL TRAFFIC CONTROL METHODS AND MEASURES SHALL BE IN ACCORDANCE WITH THE AUGUST 2011 EDITION OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
7. IF UNSAFE CONDITIONS ARE OBSERVED DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL MEASURES AS DIRECTED BY THE CITY.
8. ACCESS FOR RESIDENTS, SCHOOL BUSES, AND EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.
9. TRAVEL LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
10. NO MATERIALS OF CONSTRUCTION SHALL BE STOCKPILED WITHIN THE "CLEAR ZONE" AS DEFINED BY THE AASHTO "ROADSIDE DESIGN GUIDE," WHILE WORK IS NOT BEING PERFORMED.
11. NO EQUIPMENT OR MACHINERY SHALL BE LEFT/PARKED, UNATTENDED, WITHIN THE CLEAR ZONE AS DEFINED BY THE AASHTO "ROADSIDE DESIGN GUIDE," WHILE WORK IS NOT BEING PERFORMED.
12. ANY AND ALL DAMAGED OR REMOVED TRAFFIC SIGNAL APPURTENANCES, TRAFFIC CONTROL DEVICES, AND/OR PAVEMENT MARKINGS SHALL BE RESTORED BY THE CONTRACTOR.
13. THE CONTRACTOR SHALL CHECK ALL SIGNS, DRUMS, AND BARRICADES WITHIN THE PROJECT AREA EVERY MORNING BEFORE WORK AND EVERY EVENING WHEN WORK IS STOPPED FOR THE DAY TO ENSURE THAT THEY ARE SERVICEABLE AND IN PROPER WORKING ORDER. ON WEEKENDS, HOLIDAYS, AND WHEN THE PROJECT IS SHUTDOWN, THE CONTRACTOR SHALL HAVE THESE TRAFFIC CONTROL DEVICES CHECKED DAILY.
14. PERMANENT TRAFFIC CONTROL AND INFORMATION SIGNS SUCH AS, BUT NOT LIMITED TO, EXISTING SPEED LIMIT, STOP SIGNS, AND STREET NAME SIGNS SHALL BE MAINTAINED AT ALL TIMES. THIS IS CONSIDERED INCIDENTAL TO THE WORK.
15. THE CITY TRAFFIC ENGINEER RESERVES THE RIGHT TO MAKE CHANGES TO THE TRAFFIC CONTROL PLAN AS DEEMED NECESSARY.
16. ALL SIDE STREETS WITHIN THE WORK ZONE OR SIGN SEQUENCE SHALL ALSO BE SIGNED.
17. ALL OPEN HOLES OR TRENCHES SHALL BE BACKFILLED AND THE SHOULDER MADE READY TO HANDLE EMERGENCY TRAFFIC BY THE END OF EACH WORKDAY. OTHERWISE OPEN HOLES OR TRENCHES SHALL BE COVERED WITH APPROPRIATE STEEL PLATING TO PROTECT AGAINST PEDESTRIAN AND/OR ERRANT VEHICLE INTRUSION. AT NO TIME SHALL STEEL PLATING BE USED IN TRAVEL LANES OPEN TO VEHICULAR TRAFFIC.
18. OPEN HOLES OR TRENCHES SHALL NOT BE LEFT UNATTENDED OR UNPROTECTED WHENEVER WORK IS NOT BEING PERFORMED.
19. LANE–CLOSURES AND FLAGGING OPERATIONS MAY ONLY BE PERFORMED BETWEEN 8:00 AM AND 3:00 PM.
20. PRIORITY SHALL BE GIVEN TO ALL SCHOOL BUSSES AND EMERGENCY VEHICLES DURING FLAGGING OPERATIONS.
21. THE CONTRACTOR SHALL NOTIFY TRAFFIC ENGINEERING AT LEAST 48 HOURS PRIOR TO ANY ROAD CLOSURE, LANE CLOSURE, OR FLAGGING OPERATION AT 382–6300 (OFFICE) OR 357–1252 (PAGER).
22. PRIOR TO CLOSING ANY ROADWAYS AND SETTING UP ANY TRAFFIC DETOUR, THE CONTRACTOR SHALL CONTACT THE PUBLIC RELATIONS OFFICER FOR THE DEPARTMENT OF PUBLIC WORKS, AT 382–6983, 48 HOURS PRIOR TO CONSTRUCTION AND PROVIDE THE FOLLOWING INFORMATION FOR ISSUING A TRAVEL ADVISORY:
    - COMPANY NAME & PHONE NUMBER;
    - COMPANY REPRESENTATIVE & PHONE NUMBER;
    - BRIEF DESCRIPTION OF WORK INVOLVED;
    - PROPOSED START DATE & APPROVED WORK HOURS; AND
    - EXPECTED COMPLETION DATE.

AFTER A DETOUR PLAN HAS BEEN SUBMITTED AND APPROVED FOR A ROAD CLOSURE, A SIGN READING "**NOTICE – ROAD – WILL BE – CLOSED – (DATE) TO (DATE)**" IN BLACK LETTERS ON AN ORANGE BACKGROUND SHALL BE POSTED ON EACH APPROACH, AT THE POINT WHERE THE ROAD WILL BE CLOSED FOR A PERIOD OF NOT LESS THAN ONE WEEK PRIOR TO CONSTRUCTION. INSTEAD OF THE AFOREMENTIONED STATIC SIGN, THE CONTRACTOR MAY USE PCMS BOARDS TO DISPLAY THE REQUISITE INFORMATION ELECTRONICALLY.

Typical Traffic Control

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)

NOTES

Standard:

1. **On divided highways having a median wider than 8', right and left sign assemblies shall be required.**

Guidance:

2. *Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.*
3. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.*
4. *All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.*

Standard:

5. **Taper Length (L) and Channelizing Device Spacing shall be:**

Taper Length (L)				
Speed Limit (mph)	Lane Width (Feet)			
	9	10	11	12
25	95	105	115	125
30	135	150	165	180
35	185	205	225	245
40	240	270	295	320
45	405	450	495	540
50	450	500	550	600
55	495	550	605	660
60	540	600	660	720
65	585	650	715	780
70	630	700	770	840
Minimum taper lengths for Limited Access highways shall be 1000 feet.				
Shoulder Taper = ⅓ L Minimum				

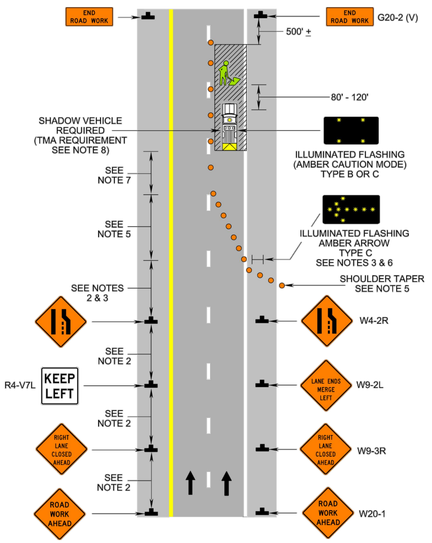
Channelizing Device Spacing		
Location	Speed Limit (mph)	
	0 - 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'
Construction Access*	80'	120'
* Spacing may be increased to this distance, but shall not exceed one access per ¼ mile.		

On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.

6. **An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).**
7. **The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit.**
8. **A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high intensity amber rotating, oscillating, or amber strobe light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.**
9. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, oscillating, or strobe lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, oscillating, or strobe lights.**
10. **When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.**

Outside Lane Closure Operation on a Four-Lane Roadway

(Figure TTC-16.0)



Typical Traffic Control

Lane Closure Operation in an Intersection

(Figure TTC-28.0)

NOTES

Guidance:

1. *The control of traffic through the intersection in order of preference should be:*
    a. *Obtain the services of law enforcement personnel.*
    b. *Detour the effective routes to other roads and streets as approved and directed by the Regional Traffic Engineer.*
    c. *Place a state certified flagger on each leg of the intersection controlling a single lane of traffic.*

    Appropriate signing as shown should be used for law enforcement and flagging operations. For detour signs see Figure TTC-34.
2. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.*

Standard:

3. **Channelizing device spacing shall be on 20' centers or less.**

Guidance:

4. *If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber strobe light should be parked 80'-120' in advance of the first work crew.*

Standard:

5. **If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck-mounted attenuator.**
6. **For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber strobe lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals or amber oscillating lights shall be used.**

Guidance:

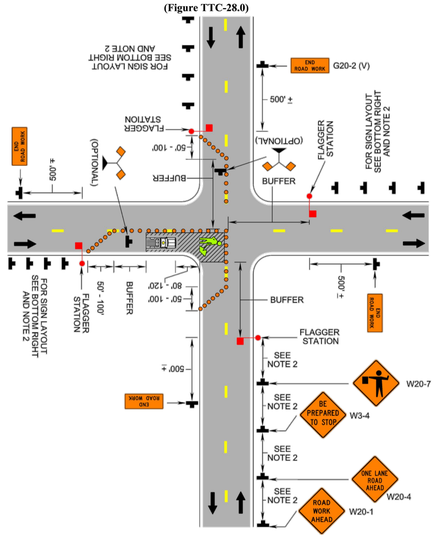
7. *If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.*

Support:

8. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

Lane Closure Operation in an Intersection

(Figure TTC-28.0)



Typical Traffic Control

Lane Closure on a Two-Lane Roadway Using Flaggers

(Figure TTC-23.0)

NOTES

Guidance:

1. *Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800' where the posted speed limit is greater than 45 mph.*
2. *Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.*

Option:

3. Where Right-of-Way or geometric conditions prevent the use of 48" x 48" signs, 36" x 36" signs may be used.

Standard:

4. **Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).**
5. **All flaggers shall be state certified and have their certification card in their possession when performing flagging duties (see Section 6E.01, Qualifications for Flaggers).**
6. **Cone spacing shall be at the following:**

Location	Posted Speed Limit (mph)	
	0 – 35	36 +
Transition Spacing	20'	40'
Travelway Spacing	40'	80'

7. **A shadow vehicle with at least one high intensity amber rotating, oscillating, or strobe light shall be parked 80'-120' in advance of the first work crew.**

Option:

8. A supplemental flagger may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

Guidance:

9. *If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign, then the signs should be readjusted at greater distances.*
10. *When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).*

Standard:

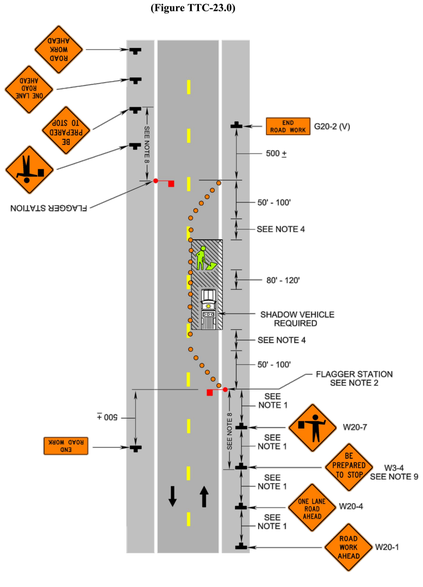
11. **At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08).**

Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet or less.
13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).

Lane Closure on a Two-Lane Roadway Using Flaggers

(Figure TTC-23.0)



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WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

No.	DATE	REVISION

PROJECT No: 068002
DATE 10/2014
DES. TD/MM
DR. MOB
CKD. JBE

PUMP STATION 134 & 123
FORCE MAIN MAINTENANCE PLAN
CITY OF HAMPTON, VIRGINIA
PUBLIC WORKS

TRAFFIC CONTROL NOTES AND DETAILS

SHEET NO.
T1